A TREATISE ON SYPHILIS.

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PREFACE.

The following work is founded on a course of lectures which I delivered four years ago to the students of the Lock Hospital.

Some alterations of form and considerable additions of matter have been made, so as to render it a compendious, yet, I hope, sufficiently complete, treatise on Syphilis, without burdening the subject with details.

I have no pretension to claim any originality for the doctrines brought forward, or the treatment recommended, in the following pages—my object being simply to place before the reader the conclusions at which I have arrived, from the study of the best works on Syphilis, and from my own observation of the numerous facts which have come before me during the last ten years, both in private and in hospital practice.

More than usual attention has been devoted to some theoretical points, a right understanding of which is, in my opinion, essentially connected with the treatment of

Syphilis. I now allude more particularly to the difference between the two species of chancre—the one being merely a local sore which does not infect the system; the other being the true syphilitic ulcer, which is almost invariably followed by constitutional symptoms.

The doctrines connected with this essential difference have not yet been adopted by many English surgeons, and are, I fear, unknown to many practitioners; but it is of the utmost importance that they should be rightly understood, and universally admitted as guides in practice, for it is difficult to conceive a more deplorable error than that which consists in administering repeated courses of mercury to a patient every time that he may contract a soft or non-infecting chancre.

The publication of this work has been much delayed by circumstances over which I had no control. I feel it necessary to notice this, otherwise trivial, circumstance, because it has deprived me of the benefit which I must have derived from several works on venereal diseases which have recently issued from the press.

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SYPHILIS.

CHAPTER I.

SOFT, OR NON-INFECTING CHANCRE.

External Characters—Activity and Irregular Progress of Ulcer—Edges and Floor—Multiplicity—Pus very Contagious—Complications—Gangrene and Phagedena—Local Treatment.

Although the chief object of the writer on any particular disease should be to describe its various forms, symptoms, and treatment, yet, in order to render the complex subject of syphilis intelligible, we must endeavour to trace effects to their causes, and ascend from a number of particular facts to the laws by which their evolution is governed. Practice is, undoubtedly, a good thing, but without general principles to guide him, the so-called practitioner merely wanders about within the narrow circle of individual experience.

To avoid this error, I shall endeavour to connect the treatment recommended with the theoretical principles on which it is founded, and shall thus be led to discuss several *doctrinal* points, without a knowledge of which any remarks on treatment would be unintelligible.

The term doctrine may appear new, but in the controversies which have arisen within the last few years on the subject of syphilis, the word has become naturalized;

for schools have sprung up, and names have been invented, according to the views entertained of the causes, nature, and treatment of the disease. Thus, we hear of "unity and duality," of "the old school and the young school," of "the Hunterian school," "Ricord's school," the German school," of "Mercurialists and Anti-mercurialists," &c., and hence it is necessary that we should be familiar with the leading features of the doctrines to which these various terms refer.

The external characters of venereal ulcers, their clinical history, and the results of experiments which shall be noticed hereafter, lead to the general conclusion that the genital organs are subject to three kinds of sores, viz.:—

1. A common ulcer, resulting from simple inflammation.
2. A soft ulcer, which is locally contagious only.
3. An indurated ulcer, which is also locally contagious, but which the clinical history of syphilis shows to be almost inevitably followed by a constitutional disease.

In a subsequent chapter of this work it will be shown that soft chancre and indurated chancre are distinct species; that soft chancre, though locally contagious, does not give rise to constitutional infection; that indurated chancre is the species from which syphilis is derived.

We have, then, a soft or non-infecting,* and an indurated or infecting chancre. Their nature and essential differences will be examined hereafter; for the present, and assuming the difference to exist, we have to deal with their external characters only, and with the circumstances attending them, as they are presented by clinical observation, or the history of the case.

* The reasons for adopting the terms infecting and non-infecting, to designate the two species of chancre, will be subsequently given.

And first for *non-infecting chancre*, the term which I shall apply to this species of ulcer, though several writers have proposed to substitute other names, such as chancroid, &c.

The non-infecting chancre, being the result of contagion, commences wherever the virulent matter has been deposited, under the form of a pustule, or of a slight excoriation rapidly passing into ulcer.

This latter also progresses rapidly. In a week or two its external characters are those of an irregular ulcer, with finely dentated edges of a bright red colour, with perpendicular wall, varying in size from a sixpence to a shilling, sometimes much larger, and presenting a soft, greyish, worm-eaten floor, which furnishes pus in considerable quantity. The ulceration being active, seated in sensitive parts, and frequently accompanied by some inflammatory action, is generally painful. After some time, very variable, the edges of the ulcer become less red and tumefied, an indication that the reparative stage has commenced; the base of the chancre also presents a change of colour, gradually passing from the grey hue of active ulceration to the rosy and more healthy tinge of a simple sore.

But it is worthy of remark that the reparative process is seldom regular in its march, one part of the ulcer healing, while another is stationary, or even progressing. This latter character may help to explain the obstinacy of this form of ulcer, which, if not cut short by appropriate treatment, may continue for many weeks, and sometimes for months together. Lastly, I must not omit to mention the principal character, which you often have had occasion to verify, viz., the *softness* of the base of the ulcer, formed as it is by a greyish, pultaceous membrane. From this character the name of *soft* chancre is derived, as dis-

tinguishing it from the infecting, *hard*, or indurated chancre.

Detailed and minute descriptions are not required in a work like the present. Instead, therefore, of following soft or non-infecting chancre through its various forms, &c., I shall content myself with pointing out the principal characters of the ulcer.

1.

The *external* appearance of the non-infecting chancre is peculiar. Its edges are red, loose, and not adherent to the underlying tissues. Its walls are abrupt and perpendicular, so that it looks as if cut out of the tissue with a punch.

2.

The floor of the non-infecting chancre presents a worm-eaten appearance; it is bathed in pus; does not contain any fibro-plastic, adventitious tissue, and is, therefore, essentially soft.

This absence of induration is a most valuable sign, and you should make every effort to acquire, by constant practice, the power of discriminating by the touch the various degrees and kinds of induration and thickening which venereal ulcers may present, especially the difference between specific induration and inflammatory thickening.

The base of a non-infecting chancre may sometimes present more or less hardening from inflammatory action; but the practised touch of an experienced surgeon will almost always enable him to distinguish inflammatory thickening from specific induration.

3.

Non-infecting chancre is much more frequently observed than the infecting ulcer. M. Puche has shown, from an analysis of 10,000 cases, that the proportion of non-infecting chancre to the infecting is as four to one.*

A similar result would, I have no doubt, be obtained from the examination of our own hospital records.

4.

The occurrence of non-infecting chancre gives no protection whatever against a second contagion. All individuals are subject to it; and the ulcer may recur over and over again in the same person.

5.

The site of non-infecting chancre may be said to be universal. Wherever the virus is applied, there this species of chancre will develop itself. You have had abundant illustrations of this character amongst the patients whom we have examined in the Lock Hospital. It is, however,

* Dr. Frazer traced the history of the ulcer in 603 cases of primary sore. Of these 141, or 1 in 4·27, were followed by secondary symptoms. In 455 cases of primary ulcer, where no specific treatment had been employed, 86, or 1 in 5·29, were followed by constitutional affections.—Report of the Parliam. Committ. on Vener. dis. p. 188.

The relative frequency of the two species is modified by certain circumstances. This has been noticed by the military surgeons especially. Hard chancre prevails in one garrison, soft in another. Dr. Hardie, in 303 cases, found the soft chancre to the hard as about 2 to 1.—Report, p. 166.

Mr. Blenkins, in the 2nd Battalion of Guards, found the proportion about 3 to 1.—Report, p. 171.

evident that the locality of the ulcer must be influenced by certain circumstances. Its natural seat, so to say, would be the glans penis in the male, especially about the frenum, and the vulva in the female; and in this hospital, at least, for the great majority of patients, the ulcers are seated on or near the genital organs. But in some other countries, from causes to which I do not desire to allude, non-infecting chancres have been observed on almost every region of the body. It has been said that soft chancre does not occur on the head or face. This is not quite correct; but the occurrence of the soft sore in these situations is certainly rare. I have endeavoured to inoculate the scalp with matter taken from a soft chancre, but without result.

6.

This wide-spread tendency to occupy any part of the body may be explained by the virulent nature of the matter which gives rise to non-infecting chancre; and hence another characteristic:—Whereas infecting chancre is generally single, the non-infecting chancre is most frequently *multiple*. For every case of single, you will find four cases of multiple soft chancre, generally varying from 3 to 6 in number. Thus, on examining the records of the Venereal Hospital in Paris for one year, it was found that, out of 254 non-infecting chancres, 48, or one-fifth, were single; the rest were multiple, and nearly one-half of the latter were from 3 to 6 in number.

These may seem minute and useless details. They are not so; for it is no small matter to be able by a single glance to suspect the truth, though we may not have yet discovered it.

7.

The soft chancre not only furnishes a considerable quantity of virulent pus, but preserves its contagious property for a length of time—nearly up to cicatrization.

Seventy-nine experiments were made on persons previously uncontaminated, in the Venereal Hospital in Paris, for the purpose of determining this point. The chancres from which the inoculating pus was taken were for the most part from 20 to 25 days old. Many of the ulcers were greatly advanced, and some even partially cicatrized; yet 69 out of the 79 inoculations were followed by the development of chancre.

8.

The matter secreted by non-infecting chancre is true pus. The surface of the infecting ulcer is comparatively dry. The latter never secretes true pus unless some irritating substance has been applied to it, or it has become contaminated with matter from the non-infecting sore.

9.

Another character of soft chancre, which you cannot have failed to remark, is its destructive tendency. The non-infecting ulcer destroys the tissues in which it is seated much more rapidly and extensively than the infecting ulcer, which seems to derive a tendency to limitation from the hardness of its base.

10.

The non-infecting chancre, again, is a long-lived ulcer, though not a chronic one. It seldom heals—I now speak of its natural course—for many weeks or even months;

remaining, as I have said, virulent up to nearly the last moment.

I have reserved to the last the two essential characters of non-infecting chancre. It is locally contagious, and nothing more. Soft chancre produces soft chancre, and is never followed by constitutional syphilis. I shall return to this important point when discussing the question of duality.

Again, non-infecting chancre gives rise to a species of suppurating bubo, which is peculiar to and characteristic of it. Hunter was acquainted with this specific bubo, which is confined to the superficial ganglia nearest the ulcer, and connected with it by a line of lymphatic vessels.

The classified description of non-infecting chancre which I have just given applies to the typical form of the ulcer, that is to say, when it presents itself with most of its characters fully developed. But you know already that several of these characters may be masked, or even absent. The form and local appearance of the ulcer are frequently modified by the nature of the tissues in which it is seated; while various complications, either accidental or connected with individual constitutions, may arise to impress their own characters on that of the specific ulcer. Thus, we may have more or less inflammation surrounding the base of the chancre, or the ulceration may be rapid and extensive, &c.; but for the present I shall notice the leading points only.

The seat and locality of the sore often modify its appearance and ordinary symptoms. Non-infecting chancre in the female is most commonly met with at the inferior commissure of the vulva. It is also often observed on the free margin, or on one of the sides of the frenum in the male. In either of these latter situations it occasions a

good deal of pain and discomfort. The friction during exercise, and the contact with drops of urine after micturition, render the raw surface irritable. These causes, and the stretching of the ulcer whenever the prepuce is drawn back, make a sore in the situation now mentioned peculiarly intractable to treatment. Indeed, the frenum is often perforated or entirely destroyed.

The natural formation of the parts not only modifies the appearance of the sore, but influences the tendency to contagion; we can readily understand this latter circumstance. A thick-skinned glans is covered by a kind of shield.

Those amongst you who have attended this hospital many times cannot fail to have noticed how patients with short foreskins, or who have been circumcised, escape the disease more frequently than individuals with long prepuces which cover the glans. We have a goodly number of Jews in attendance at the Lock for gonorrhœa, but comparatively few for soft chancre. The explanation of this difference is easy. The exposed skin on the glans of the circumcised becomes thickened, and therefore less accessible to inoculation; while the removal of the prepuce has diminished the extent of inoculable surface, and taken away the folds of skin in which the virus is likely to lodge.

What I have just said will prepare you to understand how phymosis is a very frequent complication of multiple soft chancre; and this form is by far the most troublesome one which we are called upon to treat. The ulcers extend rapidly, because the glans and the prepuce are constantly bathed in pent-up virulent matter; and in this complication you might be tempted to divide the prepuce. But on no account have recourse to an operation, for reasons which I shall explain when I come to speak of treatment.

I may, however, direct attention to this patient now

before us, as he may not be present at a future time. He was operated on in one of our large hospitals, four months ago, under the eireumstanees whieh I have just deseribed. The cut surfaees have beeome inoeulated, and he now presents a soft chanere extending over the whole dorsum of the penis.*

Gangrene is a frequent complieation of soft chanere, at least amongst the inhabitants of large cities. Hardly a week passes over without our having to treat patients in whom this eomplieation has supervened. Thus, amongst the out-patients we have a man who was suddenly attacked during the interval between his visits, and so severely, that within a week the skin of the prepuee was eompletely eaten through, leaving an opening the size of a florin. The misehief has fortunately been arrested, but when the patient gets well we shall be eompelled to perform eireumeision. The liability to gangrene has little or nothing to do with the nature of the contaminating virus. Surgeons are now agreed that it depends on general influences or eonstitutional eauses, eommonly manifesting itself amongst the poor, the ill-fed, the ill-elothed, and dirty inhabitants of erowded localities. Another most eommon exeiting eause are pent-up fœtid diseharges, giving rise to excessive inflammation and subsequent sloughing; the gangrene in the patient above alluded to was oceasioned by this complieation. Intemperance is speeially a predisposing eause. We rarely meet, on the other hand, with gangrene in private praetice.

Gangrenous chanere is most common amongst the lowest elass of prostitutes. The female Loek Hospital is seldom without eases of this kind. It gives rise to all the

* The patient romained in hospital under treatment for two months aftor the delivory of this lecture; that is to say, six months elapsed before the wound was healed.

symptoms of inflammatory fever, and is accompanied by intolerable pains. The ravages produced by this complication are sometimes frightful, for the gangrene may gain ground rapidly, deepening and spreading, until it destroys all the external organs of generation. The last case which I saw at the Lock Hospital was that of a young girl, twenty-two years of age, sent in from the Farnham workhouse, and afflicted with two gangrenous chancres. One of the ulcers had destroyed the labia majora and minora; while the second, which was as large as a cheese-plate, extended from the verge of the anus deep into the buttock. This gangrene sometimes proves fatal, though not so often as might be expected. Experience has fully established the fact, that gangrenous ulceration of the genital organs is always accelerated, and often induced, by the improper administration of mercury.

Gangrene may also attack the hard chancre, but this is certainly not so common an occurrence. Although, strictly speaking, not in the first instance contagious, it so closely resembles hospital gangrene, that the same precautions should be observed in the use of sponges, &c.; because any of the foul secretions brought in contact with another wound would undoubtedly convert the latter into a sloughing sore.

Chancre may likewise be complicated with phagedena, of which we have a fair example before us. The chancre in this case involves the whole circumference of the prepuce. There is considerable tumefaction of the penis, and excessive inflammatory action. There is no true sloughing of the sore, but it is deep in certain points, from the great rapidity of the ulcerative process, and in this respect it differs from the gangrenous form.

The serpiginous chancre differs from the phagedenic in its tendency to extend over the surface rather than to deepen

into the substance of the tissue. We have no good example of this form at present in attendance; but most of you have seen a patient with two troublesome ulcerations in the groin, which are not yet healed, and which have taken an irregular semicircular course, as indicated by the cicatrices which mark its track. This was a specimen of serpiginous ulcer, though not so striking as many which have come under our observation. The edges of a serpiginous chancre are generally undermined, and the surface secretes a thin sanious matter. The course of the ulceration is marked by a cicatrix, the ulcer healing in one direction, as it extends in another. The secretion from this kind of sore is copious and readily inoculable, and the individual bearing it frequently becomes inoculated in more than one place, from lack of strict attention to cleanliness. Generally the health is not much affected.

The worst case of this kind which I ever witnessed occurred in a patient at the Lock Hospital, in the Harrow-road. The ulcer had existed many months, and had traversed the greater part of the thigh. The surface of the sore was completely destroyed on three separate occasions, by the application of lint saturated with the strongest nitric acid; but, in spite of this, and all other treatment, both local and constitutional, the patient after many months left the hospital uncured.

CHAPTER II.

TREATMENT OF NON-INFECTING CHANCRE.

Local Treatment—Abortive Method—Lunar Caustic and Astringent Lotions—Complications — Phymosis — Gangrene — Phagedena—Serpiginous Ulcers—Paraphymosis.

We have seen how non-infecting chancre constitutes a specific ulcer, highly contagious in a local sense, but never infecting the constitution, so as to give rise to secondary symptoms. From these characters we may deduce the main principles of treatment to be adopted.

The non-infecting ulcer will require local treatment only, and our principal aim will be to convert the specific lesion into an ordinary sore, thus getting rid of its peculiar characters, and preventing those tendencies which sometimes render soft chancre so intractable or even dangerous.

This practice, clearly laid down by Hunter, and sanctioned by the high authority of M. Ricord, has prevailed from the earliest periods. It is sometimes called the *abortive* method, and is now employed, not for the purpose of preventing secondary infection, but of modifying the nature of the local ulcers, with the object, in a word, of converting a contagious ulcer into a simple sore. Hence the rule of practice now generally adopted. On the first appearance of any sore on the genitals, presenting the characters of

soft chancre, destroy it at once by the application of a caustic. This practice must not be employed indiscriminately, but be reserved for those cases which, from the character of the sore, &c., may be regarded as examples of non-infecting chancre.

Nitrate of silver is not sufficiently destructive to effect our object here, especially if we follow Ricord's advice, and destroy the tissues somewhat beyond the edges of the sore. You will find it more advantageous to employ nitric acid, or the carbo-sulphuric paste. Some surgeons prefer the chloride of zinc paste, while others have recourse to the actual cautery. When the eschar has fallen off, the ulcers thus treated heal well; indeed, it is not rare to see that cicatrization has commenced even before the separation of the eschar. Notwithstanding these advantages, I am not an exclusive advocate of cauterization. Though founded on a correct principle, the practice has its inconveniences. The ulcer often occupies a situation not favourable for the application of a powerful caustic, or we may have too many sores to attack in this way.

Again, in many cases we have erosions of various kinds, which may be treated in a more simple manner.

It is a well-known fact that various substances possess the power of neutralizing animal poisons, an effect which seems to depend on their action on the albuminous matter with which the poison is mixed. Strong solutions of citric acid, the alkalies, alum, perchloride of iron, &c., are endowed with this property, for experiments have shown that they prevent the development of inoculated chancre, even when applied many hours after the application of virulent matter.* However this may be, the practice usually adopted in this hospital is the following:—

* Rollet, "Traité des Mal. Vener.," Paris, 1866, p. 180.

We pay the greatest attention to cleanliness, so as to prevent the virulent matter from coming into contact with the surrounding parts. Hence a piece of lint or cotton-wool is kept constantly in contact with the surface of the ulcer. Whatever kind of lotion is used with the lint, it must be reapplied more or less frequently; more often, when the sore is large and the suppuration abundant; less frequently, when the quantity of matter secreted is small, or when the ulcer manifests a tendency to heal.

Having full confidence in the doctrine that soft chancre is a local disease, we confine our treatment to local remedies. This, of course, implies that no special reasons exist for the employment of ordinary general treatment; for, if the patient be pale and anæmic, preparations of iron will be indicated, &c.; at all events we never give mercury, which is not only useless, but may prove injurious.

In the majority of cases it will be sufficient to touch the chancre once or twice a week with the nitrate of silver, and to apply, during the intervals, some form of astringent lotion. In many cases, where I have had the opportunity of seeing the patient often, I have touched the sore lightly with the nitrate of silver every second or third morning, covering it with dry lint immediately after the application, and afterwards applying the water-dressing. Under this mode of treatment, I have repeatedly seen large ulcers heal rapidly. Amongst astringent lotions the best are the "aromatic wine," weak solutions of sulphate of copper (two grains to the ounce), also weak solutions of the potassio-tartrate of iron, varying in strength from one scruple to a drachm to four ounces of water, and finally, solutions of lead, or of sulphate of zinc, or of carbolic acid in the proportion of one part to twenty or thirty. As a practical hint I may mention that frequent changing of

the local application may often be necessary, but that it will soon become apparent which particular lotion is doing good.

These different lotions have the effect of diminishing the quantity of matter secreted by the ulcer; and they may have the further advantage of modifying the tissues immediately adjacent to the sore, and rendering them less accessible to the action of the virus. But the one form of local remedy to be especially avoided for ulcers underneath the prepuce are ointments of all kinds. They soon get rancid, decompose, and become a source of irritation. I first learnt this fact, many years ago, from the writings of M. Ricord, and subsequent experience has fully confirmed the correctness of his opinion.

The treatment of soft chancre, under ordinary circumstances, is at once simple and successful. But the complications of the ulcer may, on the other hand, compel you to have recourse to very active measures. You will remember the principal complications, inflammation, rapid ulceration, gangrene, phagedena, phymosis.

The latter accident is frequent, and extremely troublesome. When it occurs, constant washing of the parts is more than ever necessary. Lukewarm water should first be injected under the prepuce, and these preliminary injections should be followed up by injections of Goulard's lotion. Should this fail to relieve the tumefaction of the prepuce, a pencil of nitrate of silver should be passed under the prepuce, and swept fairly round the glans penis, and this may be repeated with advantage after three or four days. The idea of incision may occur in these cases. On no account, however, divide the prepuce. Formerly the danger of inoculation was not well understood, and the consequences of slitting up the prepuce were, in some cases, deplorable.

I have shown you a patient whose recovery was retarded for six months by this erroneous practice, when the divided surfaces became inoculated with the chancrous matter.

One condition, however,—and it is one not uncommonly met with in this hospital—may render division of the prepuce indispensable. I now allude to cases in which we find gangrene supervening on soft chancre attended by phymosis. Here you must make sure of the correctness of your diagnosis ; and if you feel assured as to the nature of the case, the sooner you operate the better ; for gangrene is a disastrous complication of soft chancre, and hardly a week passes in this hospital without our having one or more patients applying for relief against gangrenous ulceration of the organs.

The local treatment found most useful for gangrene is the saturated solution of the potassio-tartrate of iron, kept in constant contact with the sore by means of lint, and changed every four hours. M. Ricord places the greatest reliance on the efficacy of this useful remedy, which he likewise gives internally. We have also found much benefit from the application of the compound tincture of benzoin, with a charcoal poultice over the dressings.

Local applications alone, however, are of little consequence. The most valuable and important remedy is opium. A full dose should be administered at night, and the effect kept up by giving small doses during the day. I usually order five minims of tincture of opium, in combination with ammonia, and tincture or decoction of bark. Stimulants must also be given freely; the more so, indeed, as the patients who suffer from one form of gangrene are very commonly those who are addicted to intemperance.

Phagedena is nearly allied to gangrene, and requires to be treated on nearly the same principles. You have seen an

example recently. If the patient could be admitted into hospital, it would be prudent to destroy the whole surface of the sore with the carbo-sulphuric or chloride of zinc paste, the saturated solution of the pernitrate of mercury, or the actual cautery. The inflammatory tumefaction, in such cases as this, does not contra-indicate the use of powerful caustics; but, as we cannot take the man in, we must try the effects of potassio-tartrate of iron lotions (two drachms to four ounces of water). Should this not agree, we may have recourse to the chlorinated soda lotion. The strength of the potassio-tartrate lotion employed here is much greater than that recommended by M. Ricord, who dissolves one part of the salt in seven of water. But he administers the solution internally, likewise, giving a table-spoonful thrice a day. When the inflammation of prepuce and penis is very acute, antiphlogistic treatment must be adopted. At the same time let me caution you against local blood-letting, either by leeches or punctures. I do so because I have had, on several occasions, patients under my care in whom the wounds produced by local blood-letting have become inoculated and given rise to fresh chancres.

The character of the serpiginous chancre is to creep along the surface, instead of eating into the depth of the tissues, as the phagedenic form does. The name originated with Celsus—"si vero latius *serpit.*"

The circumstances which impress this character on chancrous ulceration are not well understood. It is often excessively obstinate, lasting for years in spite of the most energetic treatment, and disfiguring vast surfaces of the body, yet not producing so much general disturbance as one would expect to find with such extensive local lesions.

From my own observation I am led to suspect that a

scrofulous taint may give rise, on some occasions at least, to this form of chancre. Effectual cauterization with the carbo-sulphuric or chloride of zinc pastes is the local treatment generally recommended for this obstinate sore; but I must confess that cauterization often fails. The ulceration is arrested for a time, and starts off afresh.

The strictest attention to cleanliness must also be observed by repeated dressing of the sore, so as to avoid fresh inoculation. The potassio-tartrate of iron is much employed abroad for this form of chancre, both externally and internally.

In all cases of intractable soft chancre, where the sore continues indolent, or manifests a disposition to extend, in spite of the ordinary local applications, the best course to pursue is to destroy the surface of the ulcer by means of caustic. For this purpose strong nitric acid or the pernitrate of mercury may be applied with a glass brush, and, as a rule, the brush will be found more manageable in the greater number of cases.

It only remains to mention one other condition which gives rise to gangrene, viz., paraphymosis. When this condition of parts coexists with gangrene, the constricted portion must be liberated by free incision. Should the gangrene still progress, the dead portion must be removed, and the whole surface carefully destroyed by pernitrate of mercury, or the actual cautery.

Mr. Hutchinson informs me that for some time past he has treated patients in the London Hospital suffering from phagedenic chancre, by keeping them day and night in a hot hip-bath, at a temperature of 98° to 100°, and that in his hospital experience he had never found this method of treatment to fail, in arresting the destructive process. Healthy action was generally set up in the ulcer within a week or a fortnight. The only case in which I gave a trial

to this method is related in a subsequent chapter on malignant syphilis. It was an exceptional case altogether, and the treatment failed, although the patient was confined to the bath for fifteen days. The bath had, however, the effect of relieving the pain, and procuring sleep, which opium in every form failed to produce. It is certainly a method of treatment which should be tried in the phagedenic ulcerations occurring in women, in whom the extensive destruction of soft parts, by the actual cautery or escharotics should be avoided as much as possible.

CHAPTER III.

HARD OR INFECTING CHANCRE.

Local Effects—General Characters of Ulcer—Laws of Infecting Chancre—Incubation—Is usually Single and Sluggish—Has a Specific Bubo—Occurs only once—Various Forms—Induration—Diagnosis of the Species—Mixed Chancre—Treatment.

We shall next take up the consideration of infecting chancre, the ulcer which gives rise to constitutional disease, to syphilis properly so called.

I have adopted the terms infecting and non-infecting chancre instead of indurated and soft, for the following reasons.

In natural history species are determined by the sum-total of certain characters, and are distinguished in many cases by some leading property.

A single character or sign, unless it be universally present, does not suffice to determine the species. If a single character, which is not constant, be taken, and if the designation of the species be derived from that character, error and confusion must arise, because several cases may present themselves, in which the name adopted does not correspond with the sign or character which may be absent.

On the other hand, the designation of the species, if taken

from some leading or essential property, is not of so much consequence, provided that it is clearly understood to what sum-total of characters the name is applied.

The term "indurated" is objectionable, and its use has led to confusion, because induration is only one of those characters by which the species, infecting chancre, is determined, and because its absence does not necessarily imply exclusion from the species.

The terms soft and indurated chancre have been very generally adopted; but if we continue to employ them, it should be with the understanding that they represent a certain sum-total of characters, and not a single palpable sign. I may use them myself occasionally, employing the word soft as equivalent to "non-infecting," and indurated as equivalent to "infecting."

M. Ricord has quaintly described hard chancre as the gate through which syphilis enters. It is, in fact, the starting-point of all syphilitic affections, except those transmitted from parent to child; and it is important to note at once that it may arise not only from the contagious matter of an ulcer similar to itself, but from a variety of secondary manifestations.

Some even suppose that a certain form of secondary lesion, the mucous patch, is a more common source of infection than the chancre itself. It has also been shown by experiment that inoculation with the blood of a syphilized person may communicate the disease.

These points, however, may be considered more advantageously at a future time, when we arrive at the doctrine of constitutional syphilis. Let us proceed at once to the description of infecting chancre.

This form manifests itself in any part of the body that has been inoculated by syphilitic matter. Its development

necessarily implies that contagious matter from an ulcer similar to itself, or from some secondary effect of that ulcer, has been applied to the point, and there excited specific ulceration.

The local effects of the syphilitic virus are not very manifest at first, and the period which elapses between the inoculation and its visible results has been called the period of *incubation*. Some time, then, after the deposit of poisonous matter, a papule, or an excoriation, as many patients will tell you, appears in the part where the poison has taken effect. The papule slowly, without pain or manifest inflammation, assumes the form of a circular ulcer, with smooth, regular edges, and regular indurated base of a greyish colour. The bottom of the ulcer is rounded off, and somewhat narrower than its orifice, so that it presents a cup-shaped appearance; for the walls, instead of being perpendicular, incline slightly towards the centre, and hence Ricord's well-known expression, that the ulcer looks as if made with a gouge. The matter secreted by the sore is small in quantity, and generally of little consistence. The progress of the ulceration is slow and limited; and the duration of this form, as compared to that of non-infecting chancre, is short. After some time the bottom of the ulcer begins to clean, its edges become thin and adherent; a film of cicatrization borders the circle, and the healing process soon extends from the *circumference* to the *centre*, without much production of superabundant granulations.

This short general description of infecting chancre will suffice as an introduction to the more detailed account of its characters, which I now propose laying before you.

I may be, perhaps, somewhat more minute here than usual, but you will all feel the necessity of being intimately acquainted with every particular appertaining to an initial

lesion which is necessarily followed by such a disease as constitutional syphilis. You will often be called on, not only to treat disease, but to pronounce a decision on questions intimately affecting the social position of individuals, and the happiness of whole families; in such cases you will have many difficulties to contend with, because persons so situated are most reluctant to reveal the truth. You must depend mainly on your own experience, and be prepared to follow up slight indications of disease to their real source.

I now proceed to describe the characters and laws of infecting chancre.

1.

This species of chancre is the product of contagion from an ulcer similar to itself. It gives rise to a similar ulcer, and, furthermore, it is almost invariably followed by constitutional syphilis.

From this law many useful deductions may be derived, the importance of which you will better understand when the responsibilities of private practice come to weigh upon you. Let us take the following example:—You may be consulted, as I have been more than once, for certain suspicious symptoms presenting themselves in a young and recently married woman. Distrust would be excited by too many questions, or by too minute an examination. Both may be unnecessary. Examine the husband at once, for the case will be clear if you find any trace of infecting chancre, even though the trace may consist in simple induration of a tissue, which some time previously must have been the seat of hard chancre.

Many other social questions, the solution of which will depend upon the infecting nature of hard chancre, may also be presented to you. Thus many of your patients will

anxiously inquire whether, after the ulcer has healed, they would be justified in marrying; or, if already married, whether you can promise immunity from infection of wife and the children subsequently born to them, when the local sore has disappeared.

You will find, I repeat, many of your patients very anxious to be informed on these points, and you will often be very closely cross-questioned as to whether a given sore on the genitals will or will not be followed by secondary syphilis.

These various points were formerly very obscure, and many deplorable accidents occurred in consequence of the crude or erroneous doctrines which prevailed with respect to them; but now the line of conduct to be pursued is clear and well defined. If the patient applies with an infecting chancre of a well-marked character, it is my invariable rule to inform him distinctly of what he has to expect, and to warn him against the consequences of neglect. Unless this be done, we expose ourselves to the reproach of having mistaken the nature of the case, and remaining an idle spectator of its development; for before three months have elapsed the patient will, almost to a certainty, be attacked by some form of secondary disorder.

2.

Infecting chancre, like the lesions which result from certain other animal poisons, has its period of *incubation*. The local effect of the syphilitic poison is not immediate. Some difficulty may be experienced when we endeavour to determine the exact period by clinical observation alone; but if the results described by the most exact observers be compared with those obtained from experimental inocula-

tion, it would appear that the period of incubation varies from about twenty to twenty-five days.

The incubation of a chancre acquired through coition seems to be longer than that of the ulcer produced by inoculation. When a subject who has never laboured under syphilis is inoculated with matter taken from an infecting chancre, all trace of the puncture disappears at the end of three or four days. After the lapse of from fifteen to thirty-five days, however, a papule forms, and presents a flattened elevation. The epithelium is shed, ulceration ensues, and with it appears the specific induration.

If the same experiment be made with the virulent matter of a non-infecting chancre, the results are different. A pustule is formed within forty-eight hours of the inoculation, and when the pustule bursts we have a soft chancre, similar in every respect to the parent one.

3.

Infecting chancre is *single*, not *multiple;* that is to say, we more commonly find that the initial lesion of syphilis is a single ulcer. The non-infecting or soft chancre is, as you will remember, often multiple. Hospital statistics show that five-sevenths of the cases of hard chancre are constituted by a single ulcer. This character, although not exclusive, will serve as a useful indication, where corroborated by others.

When multiple infecting chancres present themselves, I have observed that they generally appear simultaneously. For this reason it has appeared to me that, in such cases, they had arisen from the contact of poisonous matter with two or more excoriations of the skin existing at the time. Multiple soft chancres, on the other hand, are gradually

developed one after the other. The more virulent matter of the soft ulcer inoculates the tissues successively without requiring the aid of abrasions.

4.

Infecting chancre is a sluggish ulcer. Its progress is *slow*, and it manifests little tendency to spread either in breadth or depth. Under ordinary circumstances it seldom exceeds a shilling in size; and in a number of cases it might pass, in the eyes of an inattentive observer, for a superficial excoriation.

5.

Infecting chancre has its specific *bubo*, which does not suppurate, and is eminently characteristic of it. I shall describe this glandular affection apart.

6.

Infecting chancre occurs only *once*, and that is quite enough. The highest authority in all matters appertaining to syphilis has affirmed, in the most emphatic manner, that a patient who has once suffered from infecting chancre can never have the same species a second time, followed by constitutional syphilis. I will not venture to say that this law is absolute, and without any exception; but it holds good in the vast majority of cases, sufficiently so to make it a general, if not a universal law. Immunity from syphilis is only to be acquired by previous infection. You will be convinced that such is the case if you watch and question our out-patients. They come here over and over again for

advice, labouring under second attacks of gonorrhœa or non-infecting chancre. Patients who have had indurated chancres return with soft ulcers, but it is extremely rare to see a patient who has twice had a hard chancre; and never, in this hospital, have I seen constitutional syphilis produced by this second ulcer, though I believe that I have seen one single case in private practice.

Infecting chancre, then, is not re-inoculable on the person affected. This might have been inferred from analogy. The same character belongs to the pustule of small-pox. Yet neither theorists nor practitioners ever formerly imagined that a second attack of constitutional syphilis was all but impossible. Artificial re-inoculation or auto-inoculation, as it has been called, is, however, practicable, under certain circumstances, which I shall explain under the head of syphilization.

The external characters of the typical infecting chancre are peculiar to it. It is a moderate-sized, regularly formed ulcer, rather superficial than deep, of a peculiar livid colour, very *symmetrical* in its different parts, secreting but a small quantity of matter, with smooth, shining edges, and walls inclining gradually and slightly towards the base, which is smooth and regularly excavated, the typical ulcer presenting a bowl-shaped form, different from that of soft chancre, which is abrupt and perpendicular. Hence the two expressions which have become classical in the history of chancre. Infecting chancre looks as if made with a gouge; non-infecting chancre as if made with a punch.

I have now described the chief external characters of typical hard chancre, but I warn you not to expect that you will always find the ulcer exhibiting this typical form. Far from it. Various circumstances may modify these external characters, which are usual, but not essential. You must be

prepared to meet certain deviations, to know when to expect them, and under what circumstances they ordinarily occur.

In the first place, I need hardly remind you that the *tissue* in which an ulcer is seated may modify its external characters. In parts where the skin is fine, and on thin mucous membranes, the chancre is generally superficial, and resembles an erosion rather than a true ulcer. It is neither punched nor gouged. Nature does not always work like a carpenter. According to M. Bassereau's observation, this superficial ulcer, attended by a slight degree of induration, is the most prevalent form of chancre. On the substance of the glans induration is often evanescent, or not well marked. M. Ricord long ago remarked that induration of the base is imperfectly developed on the mucous membrane lining the interior of the vagina. In this situation the ulcer is superficial; the induration is of the kind called "parchment," and soon disappears.* On the edge of the prepuce the ulcer is often rather prominent than excavated, from undue development of the indurated base. On the skin of the penis it has a tendency to assume the appearance of an ecthymatous pustule.

You will also bear in mind that the external appearances must necessarily vary, according to the period at which the ulcer is submitted to examination.

From these brief remarks you will conclude that the *typical* chancre, though not exactly a creature of fancy, is not always to be found such as our elementary works describe it; and that no absolute diagnosis can be derived from any single external character. The only characters on which complete reliance can be placed are induration of the base of the chancre, and of the lymphatic glands taken together. Hence our last and most important law.

* "Leçons sur le Chancre," p. 155. Paris, 1860.

8.

Induration of the base and of the lymphatic glands is the chief characteristic of infecting chancre. Hard chancre, accompanied by its specific bubo, is the initial lesion of constitutional syphilis—the sign that the individual affected with it will, almost to a certainty, be attacked at some future period by secondary symptoms. I shall, therefore, detain you for some time with the consideration of this important character.

It was well known to Hunter, who described the "thickening" or induration as being of a specific venereal kind; and hence the name of Hunterian chancre, so long given to the indurated ulcer. But it would be unjust to the eminent surgeons who preceded him, if we did not remark that this character of specific induration has been constantly insisted on by all the early writers on the venereal disease. I shall give you some examples. In the year 1552, a French surgeon, named De Hery, wrote thus:—"All experienced practitioners recognise the fact that the most certain sign of the pustule or ulcer is a *hardness* in its base, whatever the more superficial character of the sore may be. So much so, that when these sores are minutely dissected, we find them infiltrated with a white, cretaceous matter." Even at this early period an attempt was made to determine the pathological anatomy of the tissue which constitutes induration. Fallopius not only described the induration as "a round, hard, and livid callosity," but affirmed that when it persisted after the healing of the ulcer we had "a most manifest and demonstrative proof that the pox was confirmed," "*sunt signa morbi confirmati.*" The great anatomist also directed attention to

the hard chord which sometimes extended along the dorsum of the penis. Ambrose Paré added to these signs the specific bubo. "When you find (said the great French surgeon) callous ulcers on the genitals, and when a certain hardness remains after them, that announces the pox; and when tumours appear in the groin, which do not suppurate, you must pronounce the patient to be completely verolized."

Here we have M. Ricord's well-known doctrine clearly laid down—the indurated base and the non-suppurating bubo are the characteristic signs of infecting chancre.

Considering the importance of this subject and the necessity of your possessing clear views with respect to the characters which distinguish the two species of chancre, I shall dwell, at some length, on the subject of induration. The chief special character of the infecting ulcer is its induration. I described its base as hard and resisting. When pressed between the fingers it gives the sensation as if you were pressing a piece of cartilage. This specific induration surrounds the ulcer evenly and completely. It terminates in an abrupt manner, differing in this respect from the spurious hardness which is sometimes met with in soft chancre, and which, as it depends on inflammation, blends gradually into the surrounding tissues.

When carefully observed, day by day, from its first appearance—uninfluenced by treatment—the induration slowly acquires consistency; but it is confined to the base of the ulcer itself, for the latter can often be lifted up between the finger and thumb from the subjacent tissues. In some cases the induration is exuberant, and the sore is raised above the level of the surrounding parts, from which circumstance it has been termed by authors the *ulcus elevatum*.

The Hunterian chancre, which is the typical hard chancre, has been very aptly compared to an ulcer resting on a split pea. There is, however, a form of induration which differs in degree from the one I have just described. It has been named by M. Ricord the "parchment" induration, because it is superficial, and when pressed between the fingers offers to the touch much the same kind of resistance as the substance from which it derives its name. In some cases, again, the induration appears to be confined to the circumference of the chancre, and does not extend over its base.

As induration, whenever it exists, is a certain sign of infecting chancre, so also it is an almost constant one. I know that M. Ricord, and with him many good authorities, admit several exceptions to this rule; but M. Bassereau, one of the most accurate and distinguished observers ever sent forth from Ricord's school, examined 325 cases of chancre in males, followed by secondary symptoms, and found induration in 301. In the remaining 24 cases induration was not discovered; yet it is not affirmed that it never existed. Besides, we know that under certain circumstances, especially where a tendency to phagedena exists, the ulceration may become so active as to remove the whole of the adventitious indurated tissue.

The induration generally sets in at an early period of the ulceration. Mr. Babington observed that it might even precede the latter. This was denied altogether by M. Ricord; but subsequent experience has confirmed the accuracy of our English surgeon.

Attempts have indeed been made to fix the precise limit to the first appearance of induration, and to the time that may elapse before it entirely disappears.

I would strongly advise you not to depend on any precise rules in this matter. You may find it early, or you may

find it late.* It may precede ulceration; it may appear with the first breach of surface; it may be postponed until after cicatrization has taken place. Finally, the induration may persist for a very considerable time after all other trace of the ulceration has entirely disappeared.

Induration of the base of the chancre may be recurrent—that is to say, may disappear and reappear, a second, third, or even fourth time. This occurrence is not extremely rare. The successive indurations may or may not be attended by ulceration on the site of the old chancre or on other parts of the penis. I have known this recurrence to take place seven years after the cure of the primary disease, in the case of a female patient at the Lock Hospital. The indurations are not followed by a new series of secondary manifestations, and must not be confounded with a second contagion.

I was consulted during the present year by a gentleman, who commonly has well-marked induration after any accidental abrasion produced during intercourse. The recurrence of the induration in this case was usually attended by some slight ulceration about the tongue and lips, but by no other symptoms. It would almost seem as if the poison occasionally asserted its power by the deposit of fresh fibroplastic material, as well as by secondary lesions.

All histologists now concur in their descriptions of the matter composing the base of an indurated chancre. The account given by Lebert has been copied into all standard

* The absence of induration, at an early period, does not justify the observer in classifying the ulcer as the soft; yet this is done daily. During the first three months of 1865, 138 cases of primary ulcer were admitted into the Naval Hospital, Portsmouth. Of those 77 were entered on the books as cases of soft chancre; but it was found that 28 out of the 77 soft chancres became indurated after admission. —Rep. p. 153.

works. I shall, therefore, give you the more recent descriptions of M. Charles Robin, and of Prof. Virchow.

According to M. Robin, the indurated base is composed of the following elements.

1.

A web of fibrous or cellular tissue, sometimes containing elastic cutaneous fibres.

2.

A considerable quantity of amorphous matter interposed between the fibres.

3.

Free, fibro-plastic nodules, forming a great portion of the mass, and always mixed with an equal quantity of cysto-blastions.

4.

A small number of fibro-plastic fusiform corpuscles.

The indurated base of infecting chancre, according to Virchow, is in all points analogous to the special lesions produced by syphilis in deep-seated parts.

"It presents the same hypertrophy of the cellular tissue, the same degeneration into fine granulations, and the same thickening of the tissues, which we find in the gummy tumours of the internal organs."

I would direct your attention to this curious analogy, for it confirms me in the opinion which I have already expressed, that the hard base of infecting chancre is not exactly "the gate through which syphilis enters" into the system, but is part and parcel of the disease, the first link in a chain which forms a continuous whole. You are not,

however, to understand that the hard base of infecting chancre contains any specific elements, in the proper signification of that term. The peculiarity of the structure consists in the manner in which the various elements are developed and combined together.

I have now described briefly the characters of non-infecting and of infecting chancre. By comparing together these characters you will be able to see in what points they differ, and from the differences to form your diagnosis. A correct diagnosis is as much necessary for your own credit as for the patient's comfort. You have to decide between two lesions, apparently alike, yet essentially different in their consequences, for one ulcer merely produces a local sore similar to itself, while the other is the fatal forerunner of constitutional syphilis,—nay, more, is stamped with the seal of that curse which visits the sins of the father on his innocent offspring.

On comparing together the characters of infecting and of non-infecting chancre, already described, we arrive at the following differences, which I shall sum up in a tabular form.

1.

Non-infecting chancre is a *multiple* ulcer, of destructive tendency, secreting an abundance of pus of a very contagious nature. Infecting chancre is a *single* ulcer, rather indolent than destructive. The fluid which it secretes is deficient in pus corpuscles, and may contain *débris* or coagulable lymph, and is not so actively contagious.

2.

Soft chancre has no period of *incubation*, properly so called. Infecting chancre, on the contrary, has a manifest

period of *incubation,* varying from one to four weeks, and sometimes much longer.

3.

The *edges* of soft chancre are red, irregular, when minutely examined, and not adherent to the subjacent tissues; those of infecting chancre are smooth and almost brilliant, more or less firmly attached to the indurated base, and rendered tense by it.

4.

The *walls* of the non-infecting chancre are abrupt and *perpendicular*, and the ulcer looks as if it were made with a *punch.* Those of infecting chancre incline a little towards the centre, giving it a bowl-like form, as if produced by a *gouge.*

5.

The *floor* or *base* of non-infecting chancre presents an irregular, *worm-eaten* appearance; that of infecting chancre is smoother, more *regular*, and above all more *uniform*—that is to say, presenting the same appearance at all points of its surface.

6.

The base of non-infecting chancre is *soft,* though it may sometimes present a pseudo-induration, due to inflammatory action. The base of infecting chancre is *indurated*, from the deposit of fibro-plastic and amorphous matter.

7.

Non-infecting chancre is attended by *suppurating* bubo; infecting chancre by *specific induration* of the ganglia, which seldom suppurate.

8.

Non-infecting chancre is *frequently* met with; it is the ulcer which we commonly find on the genital organs of our out-patients. Infecting chancre is, on the other hand, comparatively *rare*. Soft chancre is three or four times more frequent than infecting chancre.

9.

Non-infecting chancre is a *recurrent* ulcer. It may appear, over and over again, in the same subject. Infecting chancre occurs only *once* in the same individual, under the *form* peculiar to it.

10.

Non-infecting chancre is *inoculable* on the same subject in a remarkable degree; the experiment rarely fails.

Infecting chancre, on the other hand, is not readily inoculable on the individual affected with it; at least, in its natural state, and with its non-purulent or ordinary secretion. This latter rule requires some explanation. The law holds good only for the earlier attempts at re-inoculation of infecting matter. The frequent practice of inoculation during late years has revealed to us some peculiarities of an interesting nature. It has confirmed the law relative to soft chancre; but has compelled us to modify the doctrine concerning re-inoculation as applied to true chancre. A positive effect with the matter of infecting chancre is more easily obtained than M. Ricord has taught us to expect. Mr. Henry Lee thinks that the non-inoculability of infecting chancre depends on the absence of purulent secretion from that species of ulcer; for when we irritate the surface

of the sore, we obtain true pus, and then the matter becomes re-inoculable. However this may be, it is certain that the re-inoculation of the matter of infecting chancre generally meets with considerable resistance from the constitution of the patient. Thus it may require several weeks or more of repeated re-inoculations before any positive result is obtained, and sometimes the inoculations fail altogether.

The experiments performed at the Lock Hospital in 1866 by Mr. James Lane, Mr. Gascoyen, and myself, also established the novel fact that there is no apparent difference, so far as external appearances go, between the sores which result from the re-inoculation of matter from non-infecting and from infecting chancre. In both cases the resulting ulcers were free from induration; the period of their duration was the same, averaging from three to four weeks, and the scars which ensued were of the same appearance. The soft secondary ulcer produced by re-inoculation of matter from an indurated chancre furnishes infecting matter. If a virgin subject be inoculated with matter from this apparently soft chancre, an ulcer will be produced, followed by constitutional syphilis. The form, then, is changed, but the essence remains.

The particulars into which I have now entered will enable you to form a correct diagnosis between the two species of chancre under all ordinary circumstances. But it occurs to my mind that I have omitted one point.

Before pronouncing authoritatively on the nature of the ulcer, it will be prudent, in some cases, to wait until the chancre has quite healed.

I have mentioned how induration may set in at a late period, or even not appear until the ulcer has completely cicatrized. This recently occurred to me in the case of a patient whose brother had suffered severely from the disease,

and who was therefore most anxious to know whether the patient would be liable or not to constitutional syphilis. Although the sore presented many of the characters of soft chancre, and there was a complete absence of induration, I declined to give any positive opinion. The sore was treated simply with a local application of the vin aromatique, and healed rapidly. Just as it was healing, induration began to manifest itself. At first I was inclined to attribute this to the local applications; but as cicatrization advanced, the special sign became unmistakable; and the patient has since been affected with sore throat and slight secondary eruption. In this patient induration did not appear until some days after cicatrization of the sore. Cases such as these are, however, exceptional; but you must not overlook them on that account, for it is in such exceptional cases that serious mistakes are generally made.

The case I have just noticed gives me an opportunity of saying a few words on mixed chancre, an ulcer which has been only correctly described within the last few years; the form, indeed, was known, but the nature of the chancre had not been made out. If the facts already related be admitted, and the conclusions derived from them be for the present accepted as correct, we have two species of ulcer: one virulent—that is, simply contagious from part to part; the other contagious and infecting—that is to say, communicable by inoculation, and furthermore infecting the system so as to produce constitutional syphilis. There are no reasons for affirming that both kinds of ulcers may not exist at the same time, in the same individual; nay, even in the same spot. Hard chancres have been observed with a number of soft chancres around or near them. The matter from both may get mixed, or one may inoculate the other; and as it is the pus of the soft chancre which is the more active and

virulent, and this chancre is more rapid in its progress, it may prevail and predominate over the other species. These are not mere conjectures. I have repeatedly inoculated an infecting chancre with pus taken from a soft chancre, and the results have been in accordance with what I have just said. The ulceration, hitherto stationary, has made rapid progress; the discharge of matter has increased and become more purulent; the ulcer itself has assumed many of the characters of soft chancre, and the indurated base has been more or less removed. Clinical observation has furnished us with examples of the same kind. A patient presented himself to me with an infecting chancre on one side of the frenum, and soft chancres on the other side. The frenum was eaten through by the more active ulceration of the soft sore, and the latter seemed to take possession of its rival, which it converted apparently into an ulcer of its own kind.

Again, if you will call to mind that the incubation of infecting chancre is long, while soft chancre appears within a few days after contagion, you will understand how this mixed chancre may be produced. Thus the contagious principle of the two species of chancre is applied to the same abrasion at the same time, and they take effect. In such a case the ulcer may present the characters of soft chancre during the four or five weeks of incubation which appertain to hard chancre. In due time, however, induration sets in, and then we have the mixed form of ulceration, presenting in different degrees the appearances derived from both sources of contagion; the surface and edges of soft chancre, with the indurated base of the infecting ulcer.

These few remarks will explain the reason why many observers have been led astray by experimental inoculation. The mixed chancre may furnish two kinds of contagious

matter, not easily separable from each other; yet the inoculator, like the analytical chemist, will unavoidably fall into error, unless the tests which he employs are pure and unmixed.

Infecting chancre may be complicted with sloughing or with gangrene; but it is the latter which, according to my experience, most commonly attacks the indurated ulcer. Some years ago the phagedenic chancre was thought to constitute a species in itself, and to be followed by a special set of constitutional symptoms. This theory is now abandoned, and phagedena is regarded as a complication produced by debilitating and other causes affecting the general health. The phagedenic process is essentially ulcerative, the phagedenic character being derived from the rapidity and extent of the ulceration. The severity of this complication differs much in different cases. It sometimes is confined to the indurated tissue chiefly; in other cases the destructive action may continue for weeks, and erode or rot away a considerable extent of tissue.

Treatment.—There is little to be done in the local treatment of infecting chancre. For a primary indurated sore there is no better application than the ordinary black wash, or where this proves too irritating, then water dressing. The sore will, in most cases, heal readily enough under this simple treatment, unless there be an unusual amount of induration in its base. This is sometimes so considerable that it becomes necessary to have recourse to constitutional as well as local treatment. Any accidental complications which arise will be met according to the indications. Thus if the sore be irritable and painful it should be dressed with opiates; if the suppuration happens to be abundant—an extremely rare case—the aromatic wine or astringent lotions are indicated. Phagedena and sloughing complicate infecting

chancre less frequently than the soft ulcer. They will require the same treatment as that already described in the chapter on non-infecting chancre. As to the use of mercury for the cure of the initial sore, I shall say nothing further here than that I cannot recommend the practice. My reasons will be given in the chapter devoted to constitutional syphilis.

The abortive treatment, which consists in the destruction of the ulcer by caustics, was formerly employed, but a more intimate knowledge of the nature of infecting chancre has led to the abandonment of a method, useless as a means of prevention, and not required as a local adjuvant.

My own experience fully agrees with that of many other surgeons, and has led me to the conviction that neither excision by the knife, nor destruction by any caustic however early applied, will prevent constitutional infection.

We repeatedly see ulcers which have been occasioned by the application of strong caustics to apparently slight abrasions, take on induration after separation of the eschar, and followed in due course by secondary symptoms. The following case is to the point.

CASE 1.—Some years ago a patient was admitted into the hospital in the Harrow Road, with a small but well-marked indurated chancre at the extremity of a somewhat elongated prepuce. I performed circumcision with a scalpel that had been just returned from the instrument-maker, and brought the edges carefully together with sutures. The wound presented a healthy appearance for the first three days, and the sutures were removed, but subsequently the cut surfaces became indurated, and constitutional syphilis followed in due course, apparently in no way modified by the operation.

CHAPTER IV.

CHANCRE IN THE FEMALE.

Non-infecting Chancre in Women—Seats of—Characters—Active Local Treatment Required—Complications—Infecting Chancre—Locality of—Induration sometimes Absent—Treatment—The Mucous Patch in Women.

THE peculiar structure and functions of the female genital organs render it expedient that we should give some account of chancre in the female.

From the greater extent of mucous surfaces which are exposed to inoculation non-infecting chancre has a greater tendency to become multiple in females than in males. Irritation from the various kinds of non-contagious secretions, to which women of a certain class are subject, will likewise account for this increased multiplicity. In women we generally find from four to six soft chancres at a time, and often more.

The seat of the ulcer is various, but it may be said, in general terms, that soft chancre becomes less frequent in proportion as we ascend from the external to the deep-seated parts of the vagina. The most common seats are the inferior commissure, the labia minora, and the limits between the vulva and the vagina; they are also found, but much less frequently, near the meatus, in the interior of the vagina, and

perhaps on the neck of the uterus. In this latter situation, however, they present the appearance of round grey patches, very similar to those of the mucous papule, and not easily distinguished from them.

In seventy-six cases of soft chancre examined by M. Robert, of Marseilles, for the purpose of determining the relative frequency of seat, thirty were found about the inferior commissure, seventeen on the labia minora, eleven at the entrance to the vagina, seven on the vulva, four near the meatus urinarius, three on the inner surface of the labia majora, two on the clitoris, and two on the caruncula. In thirty-five cases, completing a series of 111, the chancres occupied different situations along the interior of the vagina.

The characters of non-infecting chancre in the female are more clearly marked when the ulcer occupies the labia majora than in any other situation. Here, when the chancre is completely established, we find the deep ulcer with its perpendicular walls and greyish-yellow floor; in other parts the aspect of the ulcer will vary according to the seat.

Thus the inner edge of a labium is sometimes occupied by a series of chancres, which may run into one another, and give rise to tumefaction of the tissues, with hardening, pain, and scalding. Higher up, just above the inferior commissure or entrance into the vagina, the soft chancre is apt to present an irregular elongated shape, because the virulent matter has taken effect on excoriations or slight lacerations, which frequently occur in this part of the vagina in prostitutes. Ulcers of the lower part of the vagina are much rarer than those just noticed; they may readily escape notice unless the parts are well separated, and a careful examination be made. The portion of the vaginal mucous membrane least exposed to soft chancre is that in the vicinity of the uterus. The neck of the organ and the

os tincœ are more frequently the seat of chancre than the upper fourth of the vagina. This may, perhaps, depend on the readiness with which the lips of the os tincœ take on ulcerative action in general. Soft chancre of the os tincœ or neck usually presents itself under the form of superficial excoriation, without any peculiar characters which enable us with certainty to distinguish it from simple erosion of the part.

Non-infecting chancre in the female requires much more care and attention than in the male. From the extent of surface, and the manner in which the parts come into contact, inoculation takes place more readily. Women also suffer more pain and irritation than men, and they are generally more negligent, except in those localities where police regulations compel them to apply for surgical assistance at an early period.

Hence the simple dressings which I have recommended for men are not suitable for females. Active cauterization should be employed early. If the lunar caustic be used, it should be kept in contact with the surface of the ulcer for some time; but it will generally be more prudent to employ some of the more powerful caustics already noticed.

The aromatic wine is one of the best local applications which can be employed, particularly if the secretion from the ulcer continues to be copious. The tincture of iodine, solutions of tannin, and other astringents, will also be found useful. It may be necessary to change the kind of application more than once during the treatment, for the one first employed may not agree, without our knowing exactly why; but any astringent may be employed which fulfils the double object of diminishing the quantity of matter secreted and neutralizing its contagious quality. It will often be necessary to add some opiate to the lotion, for soft chancre is much more

frequently the cause of irritation and pain in the female than in the male.

Phagedena is also a complication more severe and intractable in women of the town than in any other class of patients. The ravages sometimes produced by this dangerous accident are, as I have already remarked, frightful, and may even terminate in death. Whether the cause of phagedena be constitutional or local has been much discussed; but it seems probable that phagedenic action may be excited by either class of causes. In prostitutes the determining influence is often evidently constitutional; but in males chancre sometimes becomes phagedenic without our being able to discover any of those general influences which are supposed to determine the destructive action. In other cases, again, the circumstances connected with the development of this accident would seem to point towards an analogy with hospital gangrene.

Whenever a general treatment is indicated by the state of health, it should be resorted to; but in all cases the local constitution must, as in the male, be arrested by free destruction of *all* the phagedenic and sloughing surfaces. The actual cautery does this effectually, yet we hesitate to employ so powerful a means for females; its action is not so readily limited, and the subsequent contraction of the vagina might be greater than is desirable. The chloride of zinc is one of the best escharotics which can be employed. When the whole surface of the sore has been destroyed by the free application of this escharotic, it will often heal readily; yet the practitioner must be prepared to meet with failure occasionally. Whether this may depend on our not having destroyed the *whole* of the tissues involved, or because constitutional derangement still exercises an influence, it is not easy to say. M. Guérin assures us

that the violent pain which sometimes attends phagedenic chancre is often calmed by irrigation with a mixture of carbonic acid and chloroform, applied by means of the ether spray instrument. Mr. Hutchinson's treatment by the warm bath has been already mentioned.

Soft chancre in the female is often complicated with an œdematous condition of the labia, which is painful and not easily removed. The swellings usually occupy the labia minora, and are not diffused, but are commonly confined to a few points of their surface, forming round œdematous tumours in the substances of the tissue. The risk of inoculation prevents us from opening or scarifying these tumours, for the treatment of which strong astringent lotions are best suited.

Infecting Chancre.—This species of ulcer is much more indolent in females than in males. Women often apply for advice at our hospitals concerning discharges from the vagina, without being aware that they suffer at the same time from chancre.

The infecting species is apparently less frequent in women than in men. The proportion of infecting to non-infecting chancres in men is from one to three or four; while in women it is as one to eight or nine; but the manner in which syphilis is propagated will account for this difference, inasmuch as a single prostitute may infect a large number of her customers.

It has also been clearly established that sanitary measures, strictly enforced, diminish the frequency of infecting chancre in the female, and thus tend materially to arrest the spread of syphilis. In the female Lock Hospital (Lourcine) of Paris, containing about 270 beds, the number of cases of infecting chancre does not exceed fifty annually.

Hard chancre in the female is generally found on the

labia, or on the inferior commissure of the vagina. On the labia majora it has a tendency to assume the circular form, and to present the specific induration; on other parts of the vaginal mucous membrane the shape and appearances of the ulcer vary much; it is often oval or elongated, and induration either passes away quickly, or is so slight that it escapes detection. In some cases the ulcer is rather elevated than deep, and bears a close resemblance to an ulcerated mucous patch; in these latter cases induration can seldom be detected. When the chancre occupies the labia minora, the induration is generally of that kind called "parchment."

When indurated chancre has its seat in the inferior commissure of the vagina, its diagnosis, from the external characters alone, is attended with some difficulty. I have mentioned how non-infecting chancre frequently occupies the commissure; it may leave inflammatory thickening of tissue behind it; or the simple ulcerations and lacerations, to which this portion of the vagina is subject, may also have given rise to thickening. It is also difficult to raise the ulcer up between the fingers, in this situation, so as to distinguish specific induration from spurious thickening.

From what has been said, it will be inferred that induration of the base less frequently characterizes infecting chancre in females than in males. This fact illustrates the propriety of the remark which I have made in a previous chapter, viz., that in order to distinguish species we must take several characters, and not rely on one character alone. Thus, although infecting chancre in the female is not always accompanied by an appreciable degree of induration, it is invariably attended by its specific indurated bubo.

The absence—if absence there truly be—of induration in the infecting chancre of the female must depend on accidental circumstances, such as locality, tissue, &c., and not

on sex; for infecting chancre on the lips, mammæ, and skin of females, is quite as regularly indurated as the typical chancre in the male.

The Mucous Patch.—The mucous patch will be considered in detail in a future chapter; but it requires some notice here in connection with chancre, because this peculiar form of eruption occurs very frequently on the female genital organs, appears at a very early period of syphilis, and finally, from its infectious nature, may be said to supply, in some degree, the place of infecting chancre.

In the female, the mucous patch may be said to be confined to the vagina, and the parts in the immediate vicinity of that organ. It is also an early and very frequent symptom. Considerably more than one-half of the females affected with constitutional syphilis will be found to have presented mucous patches on the vulva, and in a large number of these cases the patch is developed soon after the appearance of the initial ulcer. The infecting nature of this mucous patch has been clearly established; but as yet we possess no knowledge as to the degree in which the lesion is contagious and infectious, whether slightly or otherwise. Yet this would be an important point to determine, because as the patch or papule is generally multiple, it would constitute a powerful agent in the dissemination of syphilis, were its contagious and infectious qualities as great as those of the primary ulcer.

The mucous patches in the female generally occupy the inner surface of the labia majora, in which case they resemble those of the skin, but are smaller and flatter. On the labia minora, where the skin is moist and thin, they have more resemblance to the patches of mucous membrane, being opaline; in this situation they sometimes present a certain degree of pseudo-induration. On the neck

of the uterus, where the patches occasionally exist, they are small, very slightly elevated, and present a peculiar appearance, which is rather pearly than opaline. These patches are liable to ulcerate in a superficial manner.

The mucous patch is also very frequently found on or near the anal orifice in women. When seated at the margin they often run into one another, and assume a condylomatous form; in other cases they are found between the radiating folds of the anus, which become inflamed and swollen; the patches themselves become ulcerated, and form elongated, fissured sores, penetrating beyond the anus, and attended with a great degree of discomfort.

In the treatment of these mucous patches our principal object will be to keep the surfaces dry and well separated from the neighbouring surfaces, which can be done by frequent changes of the lint dressings. The surface of the patch may be powdered with calomel, or equal parts of calomel and starch; the black wash is also efficacious, and may be employed where it is difficult to keep the surfaces dry.

CHAPTER V.

SYMPATHETIC AND CHANCROUS BUBO.

Bubos—More Frequent in Males—Causes—Characters of Chancrous Bubo—Mode of Production—Diagnosis of the Two Kinds of Bubo.

I HAVE mentioned amongst the characters of non-infecting chancre its tendency to produce a specific bubo. The ulcer may also be followed by common inflammation of the inguinal glands. We have thus two kinds of bubo, which must be distinguished from each other, and described apart. They are the simple, sympathetic bubo, and the chancrous bubo. The term bubo is derived from the Greek word *βουβων*, signifying the *groin;* but it is commonly employed to express any glandular swelling of venereal origin, whether the affected gland be seated in the groin, or in any other region of the body.

We have before us examples of simple bubo arising from soft chancre, and from gonorrhœa. The most occasional attendant on the out-patient practice at this hospital must have been struck by the greater proportion of men than of women suffering from bubo. The habits of the patients may have some influence on this circumstance, but they will hardly account for the great disproportion which exists between the sexes. From the statistics of the French Venereal Hospitals it appears that one-third of the male

patients affected with soft chancre have virulent bubo; while the proportion for women is about one-tenth. Before going any further, however, it may be useful to allude to certain anatomical peculiarities in the course of the inguinal lymphatics. The more internal of the superficial inguinal glands receive the lymphatic vessels of the prepuce, glans penis, and scrotum; and of the external genital organs of the female. The course of the vessels themselves, before reaching these glands, is not always regular. They occasionally cross one another. For example, a lymphatic from the right side may cross over at the dorsum of the penis, and proceed to the left groin, or *vice versâ*. This accounts for the apparent pathological anomaly of a bubo occurring in the left groin, while the chancre which has given rise to it occupies the right side of the penis. The general law, however, is that the bubo affects the nearer superficial ganglia. Hence, when simple bubo derives its origin from soft chancre of the penis, it is generally situated just above Poupart's ligament. When the chancre occupies any other locality, we find the bubo in the glands anatomically connected with the source whence it is derived, that is, the chancre.

Certain predisposing and exciting causes favour the occurrence of bubo in patients affected with chancre. The predisposing causes are scrofula, and a low condition of the system produced by excesses, such as the abuse of stimulants, or arising from poverty, want of food, and other debilitating causes. Amongst the exciting causes, the most frequent are violent strains, over-exertion, excessive fatigue, the injudicious application of irritants to the sore, and inattention to ordinary cleanliness. Whatever cause may set up inflammation in or around the chancre, will tend to propagate that inflammation to the neighbouring glands.

The precise manner in which this bubo is produced has been explained in different ways. Some ascribe it to sympathy between the ganglion and its corresponding sore; but the word sympathy is too often employed to cover our ignorance. Other writers attribute it to extension of inflammation along the lymphatics of the part. I regard this latter as the true explanation, because we can frequently trace inflamed and thickened lymphatics along their line as they extend from the ulcer on the penis to the bubo in the groin.

The same mode of development may, besides, be observed in cases where abscess of the glands below Poupart's ligament follows an injury on the foot, or when the glands in the axilla tumefy after a whitlow on the finger. From what I have just said, you will understand that it is unnecessary for me to enter into any particular description of this simple bubo. There is nothing specific in its character. The lesion belongs to the domain of general surgery. The symptoms, progress, and termination of the sympathetic bubo are those of inflamed ganglia arising from certain ordinary injuries, and unconnected with venereal contamination.

The chancrous bubo, like the sympathetic, commences in the ganglia nearest to the ulcer, and placed at the extremity of the line of lymphatics which connect the chancre with the gland. The latter becomes painful and enlarged, then becomes adherent to the cellular tissue; the inflammation gains the skin, which presents a bright red colour, and as the ganglion suppurates rapidly, the inflammatory action around soon gives rise to suppuration likewise.

The abscess now bursts, and exhibits certain characters very different from those of an ordinary abscess. It takes on at once an invading action, rapidly destroying, though in a very irregular manner, the integuments which cover the

gland, and ere long presenting all the features of a large virulent ulcer, while the matter discharged from it is capable of producing an ulcer similar to itself. The only explanation which has as yet been given of the formation of this chancrous bubo is that specific matter from the parent soft chancre has been carried along the lymphatics and deposited in the interior of the gland. In some cases, however, the bubo may have been an effect of inoculation. Thus a simple inflammatory bubo is opened; from carelessness, or accident, some pus from the original chancre is deposited on the wound, inoculation takes place at once, and the simple sympathetic bubo is converted into a chancrous bubo.

Some surgeons, indeed, regard this latter as the only way in which the specific bubo of soft chancre is produced; but my own experience is entirely opposed to such an opinion. I have frequently seen bubos, which have been opened or have burst long after the healing of all ulceration, assume, nevertheless, the character of a soft chancre. In order to test the matter experimentally, I have inoculated the patient with pus taken from such a bubo, and succeeded in producing a soft chancre.

We have now before us two patients, one affected with simple, the other with chancrous bubo. Examine them carefully, inquire into the history of the two cases, and you will be struck at once by the differences which exist between them. The characters of chancrous bubo may be thus briefly enumerated:—

First.—It is seated in the superficial ganglia nearest to the parent ulcer, affecting, as a rule, a single gland of this chain.

Second.—It terminates inevitably in suppuration.

Third.—The pus produced is of a virulent and specific nature; that is, engenders soft chancre on being inoculated.

Fourth.—The progress of the chancrous bubo is rapid, and the symptoms attending it are acute.

Fifth.—The chancrous bubo, from its nature, often presents at a certain period the anomalous character of a mixed bubo.

The inflammation in the interior of the gland, as we have seen, is virulent; the exterior inflammation is simple. When the glandular abscess opens, the two kinds of pus become mixed together, and the wound is converted into a chancrous ulcer.

My own observations in this hospital lead me to conclude that inguinal bubo may often commence in the simple form, and subsequently terminate in the chancrous variety. In these cases, the inflammation produced at an early stage of soft chancre gives rise to simple extra-glandular inflammation. The inflammatory action around the ulcer subsides, and after this takes places, the virulent matter of the chancre is conveyed by the lymphatics to the interior of the gland, producing therein specific inflammation. The following experiment has been frequently repeated, and always with the same results: The bubo has been opened, and extra-glandular matter liberated. Inoculation with this matter has always been followed by negative results. An incision has then been carried into the interior of the gland; the matter thus obtained, when tested by inoculation, has always proved to be virulent; that is, has given rise to soft chancre.

Diagnosis of the two forms.

It is impossible to distinguish these two forms of bubo from each other at a very early period of their development. However, as inguinal bubo is often the first symptom which the patient notices, and, as he is naturally anxious to learn something about it, the surgeon must be prepared with an answer at the earliest moment possible.

The relative frequency of the two forms will not assist us

much. Statistics seem to show that one kind is just as frequent as the other. The same remark applies to sex. Men are much more subject to bubo than females; but it has not yet been established whether there is any difference of proportion between the forms, whether it be the simple or specific bubo which prevails amongst men. For my own part, I am inclined to say the former, inasmuch as men are more liable to its exciting causes. You must seek, however, whatever light observation may throw on this subject, for it would be disagreeable to confound two lesions, one of which is to become a simple abscess, the other a virulent chancre.

The chief characters on which we have to depend for our diagnosis are the acute nature of the symptoms at the commencement, and the rapid progress of the case when bubo is once formed.

First.—Some indication of the nature of the case may be derived from the period of the appearance of the bubo after the parent ulcer. The results of inoculation show that sympathetic bubo occurs at an *earlier period* than chancrous bubo. I have endeavoured to explain this to myself in the following manner: When inflammation has set in around the soft chancre, the capillary lymphatics become inflamed also; they are, therefore, more or less compressed, and, in a certain sense, obliterated by the engorged tissues which envelope them. The passage of pus to the neighbouring glands may thus be prevented altogether, or delayed for a certain time, and the occurrence of specific bubo will be accordingly at least postponed.

It is only when the inflammatory action has ceased, and when the sore has assumed a more indolent condition, that transport of the virulent matter takes place, giving rise to chancrous bubo.

Second.—The symptoms attending this last-named bubo

are always more or less *acute*, as shown by the severe pain, impediment to motion of the limb, the heat and redness of the skin, &c.

Third.—As chancrous bubo tends almost inevitably to *suppuration*, we may infer that we have to do with the sympathetic form, whenever we see signs of commencing resolution. The character of the abscess, when fluctuation becomes apparent, will also assist us in our diagnosis. In sympathetic bubo the suppuration is more superficial, because it occupies the extra-glandular tissue, and we may sometimes feel the glandular knot at the bottom of the soft tumour. In chancrous bubo, the fluctuation is general and rapidly developed; the whole mass seems to have dissolved into pus, and in a brief period after the commencement of the attack.

Fourth.—The same difference may be observed in the manner of opening of the two abscesses. Simple bubo *opens* like any other *common abscess* under analogous circumstances, at the place where the abscess points after thinning of the integument. Patients, on the other hand, will tell you that their abscess has *burst*. This character belongs to chancrous bubo, and depends on the rapidity of the suppuration. The opening is large, central, and the quantity of the pus discharged is very considerable.

Fifth.—The mode of *healing* will likewise furnish some indication of the nature of the case. Simple bubo heals like a common abscess, but a chancrous bubo, being transformed, as I have said, into a chancrous sore, follows the laws of that ulcer, although in a modified way.

Sixth.—The only certain sign, however, is that derived from *inoculation*. If the bubo be simple, inoculation remains without effect. If the bubo be chancrous, its pus will give rise to a soft chancre.

CHAPTER VI.

TREATMENT OF SIMPLE BUBO.

Treatment in Early Stage—Antiphlogistics—Compression—Practice when Suppuration sets in—Modes of Opening Bubo—After Treatment—Multiple Abscesses—Bubo in Scrofulous Subjects—Treatment of Fistulous Sinuses.

I HAVE mentioned that non-infecting chancre may be followed by inflammation of the inguinal glands, constituting bubo, or adenitis, as the swelling is sometimes called.

This inflammation is either simple or virulent, and hence it is of great importanee to distinguish the two forms, inasmueh as the treatment should be modified aceording to the nature of the lesion. In the preceding ehapter several characters have been pointed out whieh may assist us in distinguishing the two speeies of bubo. It is, however, impossible to say, at a very early stage, whether the adenitis depends on glandular irritation alone, or whether it is occasioned by the presence of virulent matter in the interior of the gland. From this uncertainty you will deduce the conclusion, that if you are called to treat bubo in its early stage, before any special signs are apparent—when inflammation, in a word, has just set in, you should have recourse to antiphlogistic measures.

The object will be to obtain resolution, if possible. For this end, perfect rest should be enjoined, and the bowels should be kept open. If the patient can confine himself to the room, the constant application of ice, or of a cold evaporating lotion to the part will be found useful. Local blood-letting, by means of leeches, will naturally occur to you, but some difference of opinion prevails on this point.

It has been objected that inoculation may take place, should the case turn out to be one of virulent bubo; but, as has been justly remarked, there is little to be apprehended from this, whenever we see the patient at a very early stage, before the symptoms have become acute, for the leech-bites will have healed before suppuration sets in.

Should the antiphlogistic treatment, thus employed at the early stage of bubo, be attended with any benefit, if the complaint begins to give way, you may act more boldly, and follow up the measures just indicated by blisters, resolutive frictions, &c.

This treatment may succeed; but I must again insist on the point, that, to be successful, it must be had recourse to at the commencement of inflammatory action in the gland. The difficulty of obtaining resolution in cases of virulent bubo is familiar to all surgeons. M. Guerin, of the Parisian female hospital, speaks highly of a method which consists in repeated blistering. A large blister is applied to the inflamed gland; the skin is not removed. The first blister may fail to produce any marked effect; another is then employed, and the blisters repeated, one after the other, quickly, until absorption has taken place. M. Guerin affirms that this method succeeds even in cases where suppuration is very far advanced. As soon as the blistered surface has become dry, another is applied; four to five

are sometimes required to effect complete absorption of the matter. An illustrative case is appended in a note.*

In hospital practice we are often obliged to modify our treatment in order to meet the circumstances under which our patients present themselves. Thus the persons who apply here are, for the most part, obliged to follow their daily avocations, which demand more or less exercise; hence, when adenitis has gained any ground, we have little or no chance of obtaining resolution.

Something, however, should be tried with patients who are compelled to move about. I believe that compression is the best treatment we can have recourse to; but do not rely on pressure alone. Before applying your bandage, cover the inflamed glands with lint, smeared with Scott's dressing—that is, with the compound mercurial cerate of the London Pharmacopœia. If the pain diminish, the dressing may be kept on for four days, and then changed.

* CASE 2.—*Two Suppurating Bubos—one opened, the other treated by blister. Cure.*—Augustine X., sempstress, 23 years of age, received into hospital on the 2nd April, 1861. Has been ill for six weeks, having contracted a chancre from a person who likewise had chancre. On examination, chancres were found on the left labium, on the inferior commissure and on the anus; she had also two inguinal bubos, one on the right side, which the dresser opened, and another on the left side; fluctuation existed in this latter bubo. April 20th. Poultices to the right bubo; the edges of the wound are extensively detached. Blister to the left bubo. April 24th. Fluctuation still perceptible in the left bubo. Blister renewed. April 29th. Sense of fluctuation continues; third blister. May 6th. The bubo on the left side is completely cured; deep ulceration near the anus; apply the aromatic wine to latter. May 13th. The left bubo quite well; that on the right side is still open, with loose edges; it is about two inches deep. Cauterization with nitrate of silver; quinine internally. May 18th. Abdomen painful; deep, irregular ulcer on anus. Muco-purulent discharge from neck of uterus. The anal ulcer was now dressed with tannin, and healed in about three weeks. The patient left hospital, cured, on the 21st June.—Guerin, Maladies des Org. Genit., &c., Paris, 1864, p. 456.

I have found this the best mode of obtaining resolution in cases where the patient could not be kept perfectly quiet. Should these means fail, after three or four days' trial, and the continuance of pain and swelling lead you to infer that the inflammation has not been subdued, the best plan will be, to apply poultices, and open the abscess as soon as you are confident that matter is present. The existence of suppuration can generally be ascertained without much difficulty; but experience teaches us that exceptional cases occur, every now and then, where no purulent matter exists, although fluctuation may have been distinctly perceived in the tumour.

I have more than once seen a bubo cut into, and nothing escape save blood and serum. It is very possible that resolution might have been obtained in these cases, and hence we should be most careful never to make an incision unless there be a certainty of the existence of matter. In doubtful cases, the introduction of a small grooved needle will clear up the point.

But if suppuration has set in, what practice are we to adopt? Should the bubo be opened at once, or after some delay? By the bistoury, or by caustics? I need hardly say that here, as in general surgery, our practice must be guided by the indications derived from certain classes of cases. No single method is applicable to all. Thus, in some cases we should employ the knife—in others, caustics. Sometimes an early and free incision is indicated; in other cases, a mixed method may be unavoidable. Let us take a few examples. Here is a patient whose case we may suppose you have followed from the outset, with suppuration fairly and unquestionably established in an inguinal bubo. Should it be opened at once? I answer, Yes; although some surgeons say that we should wait until the glands have

softened down under suppuration. How should the bubo be opened ? I answer, With the bistoury. Carry your incision through the centre of the abscess in a direction parallel to the median line of the body, and let the incision be sufficiently long to allow the matter to escape freely. The cicatrix may be a blemish, but will be much less disfiguring from one free incision than from incisions that have been repeated, because the first has been too limited to allow of the escape of the matter. The perpendicular direction of the incision will prevent the pus from bagging, as it is termed ; and the edges of the wound will be very little influenced by the movements of the body. Linseed meal poultices should be applied for a few days. When the matter has drained away, and reparative action has fairly set in, water-dressing may be substituted for the poultices, and the wound will heal rapidly if the bubo has been, as we now suppose it to be, a simple, uncomplicated bubo. In other cases, however, although the patient may be seen early, you will find him presenting several small abscesses, the result of indolent inflammation. There is not much pain, or redness over the part, and fluctuation may be felt at two or more distinct points. Here I would recommend you to have recourse to potassa fusa, and not to the knife. The caustic will furnish a good-sized opening, and at the same time excite sufficient action to produce adhesive inflammation.

This treatment also applies to another form of bubo met with in cachectic subjects, where the skin is thinned over the abscess and is of a purple colour, the matter sanious, and the inflammation attacks the tissues over and around the glands, rather than the glands themselves.

The treatment, after opening the abscess, may also require some modification, according to the manner in which the

sore appears inclined to heal. We must, in fact, vary our means here, as we would in cases of ordinary abscess.

Should things go on favourably, the simple dressings already mentioned will be sufficient; but this abscess, being of a simple kind, although of a venereal origin, may resemble ordinary abscess in many points. Thus it may be slow to heal, throwing up irregular or unhealthy granulations, presenting, in a word, the characters of indolent abscess. In such cases you will adopt the ordinary practice, founded on the two principles of stimulating action in the vessels and promoting contraction in the walls of the abscess.

Here, again, is another set of cases, often met with during practice amongst the lower orders of people, who are careless and inattentive. You have not been called to see the patient at an early stage. The inflammation has occupied two or more glands of the inguinal group; suppuration has set in; and the small abscesses have opened at different times, or some of them may be united with others. A succession of abscesses may protract the case; under such circumstances we should have recourse to the potassa fusa for the openings, while any tendency to indolence may be combated by stimulant injections, such as tincture of iodine, &c.

At our last meeting, I showed you a scrofulous patient with open bubo. What struck you most then was the appearance of an inflamed gland, which sprang up like a fungous growth, and projected beyond the edges of the wound. If you examine the patient now, you will witness the effects of our local treatment: the projecting gland has been sprinkled every morning with the powder of the nitric oxide of mercury; it has already been brought down to a level with the rest of the wound, and the whole surface now presents a uniformly healthy appearance.

This case leads me to the consideration of simple bubo, when it affects scrofulous subjects. The exciting or determining cause, in such cases, is simple irritation, and hence the scrofulous diathesis more easily assumes and manifests its peculiar characters in the tumour subsequently produced. Scrofulous persons are more subject to bubo than other individuals, and, as I have just said, the character of the bubo is entirely given by, and bears the stamp of, its scrofulous origin.

The inflammation is slow in its progress, and generally involves several of the glands comprised in the inguinal group. If not submitted to treatment, the affection may continue for several months, and slowly acquire considerable size, but the volume of the tumour does not depend on the quantity of pus contained within it. The greater part is composed of fungous growths slowly developed into a matter somewhat analogous to that of the soft scrofulous tumours around joints. Above and between these growths we may find nothing but bloody serum, or a very thin sero-purulent fluid. The skin which covers the tumour is thin, and of a shining appearance. When it gives way, or has been opened, we discover the fungous growths springing from the different glands involved, or, if they have suppurated, we detect many different collections of matter, which may remain isolated, but are generally connected by sinuses burrowing in various directions.

The patient now before you presents a fair specimen of the ordinary appearance of this kind of bubo. There is considerable swelling in the groin, the skin is inflamed and brawny; and, on introducing a probe into any of the several openings, the instrument passes readily enough in the direction of the neighbouring fistulæ. Your attention is particularly directed to these fistulous sinuses; for, if

neglected, they extend in various directions, both in depth and length, and when the surgeon is called on to interfere, he is frequently obliged to make most formidable incisions.

I remember a case in private practice, where abscesses had been forming in each groin for eighteen months. Some had been opened, the others allowed to burst. When I was consulted there were several openings in each groin, with fistulous tracts, more or less deep, extending upwards towards the walls of the abdomen, and downwards to the inside of the thighs. The incisions which I was compelled to make on the right side were very deep, and extended from the anterior superior spinous process to the inside of the thigh in one direction, while a cross incision was carried as far as the crural ring. The patient was confined to bed for six weeks. Shortly afterwards I sent him to the country, where he made a good recovery.

I would, however, remark that in this particular case, the necessity of so severe an operation was mainly due to the patient's own obstinacy, for he persisted in going about after the abscesses had been opened or burst. Had the consequences of such imprudence been clearly pointed out to him a year before he applied to me, an appropriate treatment would have saved him from some risk, considerable suffering, and an unusually long confinement.

This case, let me add, is the most severe of the kind that I ever witnessed, but cases of the same description are by no means rare. Every week we have three or four out-patients with chronic bubo in one or both groins, and fistulous openings which communicate with each other by extensive sinuses. They occur in scrofulous subjects chiefly, but also in those who, from either neglect or dread of an operation, allow collections of matter to form and burst over and over again without seeking advice. Occasionally, however, these

fistulæ form in spite of the greatest eare on the part of the patient, and the best attention on that of the surgeon.

The treatment of these eases must be general as well as surgieal; the former is indispensable. In the praetiee of surgery you must never forget that diseases eannot be artifieially divided and distributed, aeeording to the denomination which the praetitioner may assume. The healing art is one, and he is a poor surgeon who confines his treatment to local remedies or operative proeeedings. In the eases of whieh we now speak, you will therefore have reeourse to the appropriate eonstitutional treatment. For the serofulous or eaehectie, a nourishing diet, with a fair amount of stimulants, should be allowed, and the constitutional diathesis must be eorreeted by those remedies whieh experienee has proved to be most effieacious. They are, briefly, eod-liver oil, bark and aeid, preparations of iron with bitter infusions, and finally the influenee of a free pure air. Exereise eannot be permitted, for the loeal injury requires absolute rest.

In the surgieal treatment, on the other hand, of these eases, you will be guided by the ordinary prineiples whieh direet our praetiee for the eure of eommon fistula. A grooved direetor must be passed into the different fistulæ, and every sinus laid open freely. Afterwards, the wounds must be earefully dressed every day, to ensure that they heal from the bottom.

At eaeh daily dressing we should avail ourselves of the opportunity to make a eareful examination of the wound, and aseertain that no other eolleetions of matter have taken plaee. If any be diseovered, they must be laid open.

These seattered abseesses never eontain any virulent matter unless they have reeeived it through inoeulation, and they differ essentially from those of ehanerous bubo in this

respect, that whereas there is a constant tendency in the openings of simple bubo to close for a time and burst again, the tendency of the chancrous form is essentially destructive, and as soon as an opening has been made, either naturally or artificially, that opening rapidly enlarges.

Finally, I may inform you, that the tendency to produce fungous growths, or granulations, must be corrected by the application of caustics, such as the potassa fusa, or the nitric oxide of mercury.

Bubo of Infecting Chancre.—The bubo of infecting chancre may also be termed specific, for it possesses two characters which are peculiar to it, viz., induration and extreme indolence. This bubo, like simple bubo, is seated in the glands nearest the primary ulcer. Hence we observe it most frequently in the groin; but it occupies the axilla if the sore be on the hand or arm; the sub-maxillary region, if the ulcer be on the lips or tongue, &c.

The bubo of infecting chancre sets in very early. It may often be detected soon after the appearance of the ulcer, or, generally, within two or three weeks. In some cases, only one ganglion of the group is attacked; in other cases several. In the first instance, the gland forms a small, hard, moveable tumour, which may be detected by pressure with the fingers. In the other instance, we detect a number of small, hard, painless knots, about the size of nuts, united irregularly together, so as to form a single mass. Our French neighbours have denominated this form a "constellation," but I confess that I cannot perceive anything celestial in it.

When the group of indurated ganglia occupies the groin, it constitutes an irregular, elongated tumour, the shape and dimensions of which may be determined by examination with the fingers. As all the superficial glands may be

involved, the tumour often forms a chain extending across the groin, one link being longer than the rest, but all indolent, painless, and in the early stage moveable beneath the skin.

The tumefaction of the glands continues for a week or so, and then becomes stationary. The further duration is extremely variable. The tumour may continue for several weeks, or, like the induration of chancre, persist for months, or even years.

The bubo of infecting chancre almost always disappears without having suppurated. In this respect it presents a remarkable difference from the analogous bubo of soft chancre.

The pathological condition of the glands now described is of the utmost importance as a diagnostic sign of infecting chancre, and consequently of constitutional syphilis. The glandular induration will clear up doubts, even when all trace of the primary sore has passed away, and will sometimes enable you not only to detect an ulcer in unusual situations, but to pronounce with certainty on its character.

In the remarks which I have just made on the bubo of infecting chancre, the words "*often*," "occasionally," "rarely," have been employed. It may, therefore, be useful to give something more precise from an analytical *résumé* of the observations of M. Bassereau.

This laborious pupil of the Ricord school examined 380 cases of chancre followed by constitutional syphilis, for the purpose of determining various points connected with the disease. Of these 380 cases, no less than 316 were followed by non-suppurating bubo; and 12 only by suppurating bubo. No accurate history of the remaining 52 cases could be obtained. Induration of the lymphatics occurred in 41 cases out of 248.

On pursuing the analysis further, it would appear as if some connection existed between the occurrence of suppuration and the form of the secondary lesions. In 120 cases of chancre, followed by roseola, non-suppurating bubo occurred 116 times, suppurating bubo only once. In 46 cases of papular eruption, the indolent bubo occurred 37 times, the suppurating bubo five times. One hundred and thirty cases of mucous patch furnished 108 cases of indolent bubo, and one of suppurating. The mucous patch appears to follow the same law with respect to bubo as roseola does. In 72 cases of pustular eruption, indolent bubo was observed 45 times, and suppurating bubo four times. Pustular eruptions, or perhaps we should say the hidden cause which determines this form of eruption rather than another, does not coincide frequently with bubo, but when the latter supervenes it has a greater tendency to suppurate. Vesicular eruptions, being rare, presented 12 cases only. They were all attended by bubo, of which 11 were indolent, and one suppurating. I should have mentioned that the pus of this species of bubo is not virulent—that is, does not produce chancre when inoculated.

Treatment.—The treatment of indurated bubo is very simple. We can do nothing to prevent the induration of the ganglia, and little to impede the regular progress of the affection. When it has become stationary, we may endeavour to hasten resolution by rubbing in mercurial or iodine ointments, &c., or the parts may be covered with the mercurial plaster; but these measures will do more to satisfy the patient than to remove his bubo. Should the latter suppurate, you will adopt the treatment already recommended for simple suppurating bubo.

CHAPTER VII.

THE DOCTRINES OF SYPHILIS.

Unity or Duality—Terms Defined—History Proves the Duality of Species—Effects are Distinct—Not Convertible into each other—Confrontation—Inoculation.

I HAVE now described at some length the characters of infecting and non-infecting chancre. I have likewise, in speaking of these ulcers and their effects, laid down certain laws or general deductions which we call the doctrines of syphilis. Let us proceed to demonstrate, as briefly as the subject will permit, the truth of the doctrines enounced.

The foundation of the doctrine, of which I am an impartial adherent, rests on the facts that the syphilitic poison is one, while the species of chancre is double. We have been called the "young school," but, if we have truth on our side, we can afford to be young, and we have the chance of living the longer.

Before entering on this subject, however, it is necessary to define the meaning of certain terms which I shall have to employ. New ideas require new words. Three several doctrines prevail concerning the immediate cause of constitutional syphilis.

According to one school, which I would call "the Confusionist," syphilis derives from almost every lesion of the genital organs following connection — from gonorrhœa, chancres, ulcers, erosions, warts, vegetations, &c.

According to the second doctrine, syphilis may be derived from every variety of chancre.

I need hardly direct attention to the confusion and uncertainty, both in theory and in practice, which such doctrines engendered. The late Mr. Samuel Cooper was one of our best elementary writers. Open his dictionary, turn to the article "Venereal Disease," read page after page, and you will be struck by the manner in which that conscientious writer, endeavouring to explain error after error, and to reconcile contradictory doctrines, at last cries out in despair, "Who shall unravel all these intricacies I know not." The young school, as it has been called, pretends to unravel many intricacies, at least, by establishing certain general laws on the basis of history, clinical observation, and experiment. You will observe that I say *general*, instead of *universal;* and for this simple reason, that the laws of living substance cannot be determined with the same certainty as those of dead matter. The doctrines we profess, the truth of which I shall now endeavour to demonstrate, are simple, clear, and precise. We are *unicists*—that is to say, we hold that the poison of syphilis is *one*,—that the constitutional disease is derived from the poison of one species of chancre *alone*, either directly or indirectly. We are likewise *dualists*, but in this sense, that we admit the existence of *two* species of chancre, the one hard or infecting, the other soft chancre, which latter is locally contagious, but does not infect the constitution. Finally, we are *unicists*—that is to say, we maintain that constitutional syphilis attacks an individual *once* only.

The terms unity and duality, unicity, contagion, and

infection, which I may have occasion to employ, are to be understood in the sense just explained.

The first and most important point in the new doctrine is the essential difference between the two species of chancre, both being contagious, but only one infecting. That a difference of some kind does exist between the two species is clearly indicated by history,—by the symptoms which accompany them,—by the forms observed at the bedside of the patient, by their duration and progress, by contagion, by inoculation. "The most simple observation," says an eminent authority, "establishes a fact which is admitted by all practitioners and adopted in every school. Chancre is sometimes a purely local disease, confined to the primary ulcer, and not extending beyond the ganglia in its immediate neighbourhood. Chancre,* at other times, manifests itself as a local ulcer, but, sooner or later, infects the whole system, and produces specific lesions in various parts of the body."

This fact, established by clinical observation, independently of any doctrine, was too patent, and by far too important, not to have excited discussion. A difference was admitted to exist, but what was the nature of that difference, and on what did it depend? Was it accidental, or was it essential?

The answer to this latter question gives us the distinction between the old and the young schools. John Hunter, and nearly all those who have written with any authority on the venereal disease, up to the last few years, were of opinion that there is no difference in the kind of matter which produces the various forms of chancre, and that any variety of the symptoms observed in different individuals depends on certain accessory circumstances, such as the constitution or habits of the patient, &c. Mr. Abernethy had more doubts on this point than Hunter. He saw clearly that all

* The term chancre is here employed in a general sense.

ulcers occurring on the genital organs were not specific, and held that the only way to distinguish those which are truly syphilitic from those which are not is by their effects on the constitution. Benjamin Bell went a step farther, though not exactly in the right direction. He seems to have conceived the idea of a plurality of poisons; at least, he attempted to connect phagedenic chancre with a peculiar virus; and what is very remarkable, he arrived at this conclusion by employing what we now call "confrontation;" that is to say, by tracing the effect produced in one individual to the initial sore from which it was derived, and by comparing together the two lesions, face to face as it were. Finally, Mr. Carmichael, of Dublin, admitted the existence of no less than four different poisons.

The stumbling-block in the way of these and of all analogous investigations was the supposition that constitutional syphilis might be derived from different kinds of ulcers. M. Ricord himself was not free from this error. It was not until the year 1852 that a distinguished pupil of his school distinctly laid down the doctrine of the duality of the chancrous species, and supported his theory by original investigations of a very convincing nature. The name of this pupil is Bassereau.

The question, then, may be thus briefly stated. The followers of Hunter and the old school regard soft and hard chancre as modifications of the same lesion, and as the effects of the same poison. The modern school, on the contrary, maintains that hard and soft chancre are two lesions essentially distinct, and bearing no other relations to each other than that they are both locally contagious, and are most commonly contracted during sexual intercourse.

The proofs of the essential distinction between the two species of chancre are drawn from history, from clinical

observation, and from experiment. I shall not dwell long upon the historical part, as it affords rather a presumption than a proof. The venereal disease appears to have been known to the Greek and Roman surgeons, and to their successors, but the affection they have described was not syphilis, according to the meaning in which we employ that term. The ancient disease was not constitutional; and it may be affirmed that during a period of nineteen centuries—that is to say, from the age of Hippocrates down to the year 1495—the descriptions of the venereal disease contained in the various works handed down to us by European writers were confined to ulcerations of the genital organs and to suppurating bubo. We now know that the only effect of soft chancre is suppurating bubo, and we are entitled to presume, though not logically to infer, that the form of disease known to the ancients was local—was, in fact, soft chancre. In confirmation of this I may mention, that the latest author who describes venereal affections, previous to the year 1495, was Petrus of Bologna. He wrote in 1490, and describes "the affection which arises from commerce with a filthy woman," as being confined to white or red pustules on the penis, and suppurating bubo in the groin. A *single* author, indeed, who is supposed to have lived in the middle ages, alludes to a constitutional affection in the following words:—"Aliquando alterat totum corpus"—"it sometimes attacks the whole body;" but the work alluded to is a work without date, and of doubtful authenticity.*

The omission of all ancient writers to describe the constitutional symptoms of syphilis is explained by our opponents in the following manner. The symptoms certainly existed, but they were either overlooked, or confounded with ordi-

* *Glossulæ Gerandi.* The commentators are not agreed as to the date of this work or by whom it was written.

nary diseases of the skin. The disease lay before the eyes of the ancient surgeons, but they did not see it. To this argument we simply reply, they would have seen and described the disease, had it existed. I leave the reader to judge which of the two suppositions is the more reasonable. Tertiary symptoms might have been so overlooked, but it is difficult to imagine how the great men who sprang up at intervals during a period of nineteen hundred years could have been ignorant of the coincidence of early eruptions with ulcers on the penis; or to reconcile this supposed ignorance with the fact, that the coincidence of eruptions with venereal ulcers was at once perceived in 1495. How came the veil to fall from their eyes so suddenly?

Such was the history of the question up to the year 1495, when the scene changes completely. About that period, and during the siege of Naples by the French troops, a severe disease, characterised by ulcers of the genital organs and the early apparition of pustular eruptions, broke out. The severity and extent of the disease gave it an epidemic character. It continued for several years under this severe form, but gradually became milder, and before the year 1520 it had subsided into the ordinary form of constitutional syphilis, such as we observe the disease at the present day. What then, we may ask, was the nature of the disease? Was it new, or was it only an aggravated form of the ancient venereal affection? Let the experienced surgeons who saw and treated it—let the contemporaneous writers who saw and described it answer the question. They all declared it to be *new*, and being unable to defeat their enemies in the field, inflicted on them the disgrace of having introduced this new disease, which they denominated the "Infectio Gallica," or French pox.

The earliest author, who wrote in 1496, one year after

the appearance of the disease, describes it as new; so did Leoniceno, in 1497; so did Peter Pinctor, in 1500. This latter, I may mention, appears to have been one of the first who employed mercury, and with it he cured a pope, a cardinal, and a canon.* It is impossible not to accept the declaration of the army surgeons on this point; they had seen and treated the old disease before 1495, and could not have been mistaken as to the novelty of the complaint which presented itself to them. It does not, however, follow that because the disease was new it must have been syphilis. The outbreak was most severe, the secondary symptoms appeared at a very early period, and those which attracted most attention were pustular eruptions, ending in ulceration. These circumstances have led many of our opponents to infer that the morbus Gallicus was either lepra, glandars, or the "lues inguinaria," which had prevailed in various parts of Europe since the year 456. To this objection I would reply, that the severity of the disease may be attributed to its having been a first outbreak, and to other accessary circumstances. Besides this, we know that, even at the present day, cases of malignant, or what has been called "galloping" syphilis, occur, which resemble the worst cases of the French disease at its outbreak.

All the cases likewise were not equally severe or anomalous. Torella, writing in 1497, describes a case of erythema, which he says appeared thirty days after the ulcer on the penis; the eruption was attended by pains of the limbs, and Torello remarked that the pains were more severe at night. In proportion as the malady became less violent, it was better

* Alexander VI., Cardinal di Segovia, Canon Centez. Mercury is mentioned as a remedy by Summarissa, who wrote a poem on the disease in 1496. It would thus appear that the use of mercury is all but coeval with syphilis itself.

observed and understood, and the surgical writers devoted special chapters to it, as distinguished from the ulcers of the genital organs hitherto known. This was done by Vigo, whose treatise on surgery bears the date of 1503. Considering the period at which he wrote, his description of the French disease is very clear. Like his predecessors, he affirms in a positive manner that it was "new, and hitherto unknown to the doctors;" he gives a faithful description of indurated chancre, and shows how difficult it was to prevent this form of ulcer from being followed by cutaneous eruptions, but he makes no mention of bubo. We can readily understand this omission, and its significancy, for the small indurated ganglia of true chancre might easily be overlooked by surgeons who had been accustomed to see the large suppurating bubos of the soft ulcer.

Fracaster, who also witnessed the outbreak of the French disease, insisted on its difference from the malady previously known. "Naturâ longè impar," it is far different in nature, for it is much more persistent, and, when cured in one part of the body, it breaks out in another, its tendency to regenerate being immortal."

Were this the proper occasion I might follow out this line of argument, and show how the symptoms of the mitigated disease which ensued on the outbreak of the Neapolitan disorder were noted by one writer after another, and that fifty years did not elapse before the morbus gallicus so described presented the essential characters of constitutional syphilis. But enough of history, which, after all, supplies us with a presumption, and not a proof.

We affirm that soft and hard chancre form two distinct species, and that one species produces constitutional syphilis, while the other does not. The observation of all experienced practitioners, from the outbreak of the French disease to the

present day, had led them to the general conclusion that some sores were much more frequently followed by infection than others. Some advanced a step further, and attributed the character of infection to indurated chancre in particular; hence the terms "Hunterian chancre," "the true venereal sore," "the ulcer with indurated base," &c., which we frequently find in works published since the time of Hunter; but no one either affirmed or taught that the so-called Hunterian chancre was the *sole* cause of syphilis. The different kinds of ulcer were accepted as sources of general infection, with this reserve, that one kind was more likely to infect than the others.

The modern school, dating from the remarkable publication of M. Bassereau in 1852, maintains the doctrine that there are two species of chancre, the infecting and the non-infecting; the former contagious and infecting, the latter only contagious. How do we demonstrate that the two species are distinct? By their effects and by the circumstance that one species cannot be converted into another. In natural history, the difference of species is determined by immutability; one species cannot be converted into another. Like always produces like.

We hold, then, that infecting and non-infecting chancre are not convertible the one into the other; and that their effects are essentially different. Hence the conclusion that the two species are distinct; and that, as both are contagious, they derive the contagious property from different kinds of virus. This latter inference is, however, by no means an essential part of our doctrine. We merely infer that the determining cause is different in the two species of chancre, simply because the species themselves are different. Beyond this we know nothing. We might admit that the two species are produced by modifications of the same virus, without

invalidating any of the deduetions drawn from the distinctness of the speeies.

The ineonvertible nature of the two kinds of ehanere is proved by elinieal observation and by experiments. The latter eonsist in inoeulating the matter taken from both speeies, and observing the effeets produeed. Clinieal observation eonsists in what has been ealled eonfrontation, whieh eonsists in traeing a ehanere to its souree, and in eomparing —side by side, as it were—the ehanere produeed with the ehanere produeing it, and *vice versâ*.

If this be done earefully and in a suffieient number of cases, we shall, almost invariably, find that like produees like —that soft or non-infeeting ehanere begets soft ehanere, and that hard or infeeting ehanere begets hard. The family likeness is perfeet.

The same mode of demonstration is applieable to the law that eonstitutional syphilis derives from the speeies whieh I have ealled infeeting ehanere, and from no other.

We owe the establishment of this important law to the observations of M. Bassereau, pursued during a period of seven years, at the Venereal Hospital of Paris.

These observations, as we shall presently see, have been eonfirmed by several independent praetitioners of various schools. Syphilitie affeetions have now been traeed to their souree from one individual to another in a large number of eases.

An individual is affected with eonstitutional syphilis, the result of a ehanere. If you sueeeed in diseovering the souree from which he eontraeted the disease, you will almost invariably find that the individual by whom he was infeeted has likewise suffered under eonstitutional syphilis.

On the other hand, examine patients who have had uleers not followed by constitutional symptoms—trace these ulcers

to their source, that is, to the individual from whom they were contracted; in such cases you will as invariably find that the ulcer of the latter individual was not followed by secondary syphilis.

The general conclusions to be drawn from these facts are the following:—

A local ulcer in the person affected with it produces a local ulcer in the individual to whom he communicates the sore. An ulcer in the infecting person, followed by constitutional symptoms, always produces an ulcer followed by constitutional symptoms in the infected individual. Like begets like. The species are distinct, so far as their effects are concerned.

The fact that constitutional syphilis derives from infecting chancre alone has also been established by simple clinical observation, without travelling beyond the individual affected. Thus, if a patient exhibit any early constitutional symptoms, such as roseola, sore throat, or the mucous patch, and if you examine the genital organs of the patient so affected, you will almost always discover either the initial sore, or some manifest indications of it. These always show that the ulcer which preceded the constitutional disease was of the species called indurated or infecting. As this method is of easy application it has been employed in a very large number of cases, and establishes the law of relation between infecting chancre and syphilis. If a patient labour under secondary symptoms, you may affirm with confidence that he has had that species of chancre which we call infecting.

Here, then, we have a radical difference established between the two kinds of ulcer—one is local, the other infecting; that is to say, gives rise to secondary or constitutional symptoms. Now, as this law forms the basis of our modern doctrine, I must support it by proofs, derived from confrontation and

from the tracing up of constitutional symptoms to the initial ulcer of the individual affected with them.

In 198 cases of syphilitic roseola, M. Bassereau was enabled to confront the patients thirty-four times. In thirty-one of these thirty-four cases he found the law to hold good. The thirty-one patients affected with the exanthematous eruption, and several other symptoms besides, were all found to have contracted the disease from individuals who themselves had laboured under constitutional syphilis. In the three exceptional cases mercury had been employed for the cure of the infecting patients, and we may fairly infer that the absence of secondary symptoms in these three cases was due to the retarding influence of that remedy.

The species of the initial chancre in the infected patient was also ascertained, in 157 cases out of 170, to have been indurated; in the remainder, no positive data could be established.

Thirty-one confrontations were made of patients affected with mucous papulæ. All these gave the same results. In every case the infecting individual was found to have had the same species of chancre, followed by constitutional syphilis, as the infected patient.

The law of relation was observed in seventeen cases of pustular eruption where M. Bassereau was enabled to confront the patients. All the women from whom the infection had been caught were found to have had chancre followed by constitutional symptoms, and in one case three of the patients had been infected by the same woman.

Here, then, we have a series of eighty-two cases of confrontation, all of which, save three, confirm the law that like produces like. The difficulty of pursuing investigations of this kind fully explains why M. Bassereau was unable to produce a greater number of cases. They are, however,

to be greatly multiplied if we adopt M. Rollet's method, leave indurated chancre aside, and say, "Syphilis always begets syphilis."

With respect to the species of chancre in the infected patient which preceded the mucous patch, M. Bassercau furnishes the following statistics. In seventy-seven cases out of 130, the patients were affected at the time of examination either with chancre, or with evident traces of chancre. Induration existed in *all* these cases.

Finally, in a series of cases of secondary syphilis, M. Bassereau found that indurated chancre had preceded the constitutional affection 301 times out of 325. It is necessary to remark that in all these cases the patients were males. It is much more difficult to trace the history in females.*

The statistics of Dr. Marston are most valuable, because he has adopted the true method of distinguishing the two species of ulcer, not by a single character, but by the reunion of several characters.

M. Ricord, enlightened by the labours of his own pupil,

* That the indurated or infecting species of chancre is the one which gives constitutional syphilis, while the soft or non-infecting remains a *local* ulcer, has been confirmed by the observations of Dr. Watson and Dr. Frazer.

Dr. Watson states that in all the cases which he was enabled to investigate during six years he saw only two cases of soft chancre followed by syphilis.—Rep. p. 373.

Dr. Frazer, 10th Hussars, has seen some cases of soft chancre followed by syphilis; but in all cases the glands in the groin had presented the specific induration.—Rep. p. 182.

Dr. Marston furnished the Parliamentary Committee with the following statistics:—The average strength of his brigade was 520 men. From 1861 to 1864 soft chancre occurred in 162 cases; it was followed by constitutional disease in one case only. Of sixty-four cases of indurated chancre, fifty-seven were followed by secondary symptoms.—Rep. p. 31.

and by the careful observations of several distinguished professors at the Lyons School, has unreservedly adopted the doctrine which we now profess, and with his usual industry has brought forward many additional facts. One hundred and thirty-four confrontations were made under his inspection, and all demonstrated to him "a similarity of accidents in the patients infected and in those who transmitted the infection to them." Seventy-five of these cases are summarily given in the last edition of the "Lectures on Chancre."

"In all the cases," says M. Ricord, "where we have been enabled to ascend to the source of an indurated chancre, we have invariably found a lesion of the same nature. In every case where several individuals had contracted their chancres from the same source, we have always found the same lesion in these several individuals: viz., an infecting chancre followed by constitutional symptoms."

"This law of relation between cause and effect has never been invalidated by a single exception; for in every instance have we found a confirmation of the new doctrine that infecting chancre transmits its own species;" that is to say, infecting chancre, and no other.

The opportunity of having recourse to confrontation in England is, for obvious reasons, extremely limited. But the evidence given before the Parliamentary Committee of 1864, so far as it goes, confirms the law "that like produces like." Dr. Marston saw only one case in which he was able to confront the patients—man and wife. The husband gave his wife the same species of chancre which he had himself.*

Mr. Gascoyen in two cases traced a soft chancre in the female to an indurated chancre in the male; but he remarks

* Rep. p. 24.

that induration passes readily away in the female. Besides, both women had subsequently constitutional symptoms.*

Mr. Longston Parker adheres to the doctrine that "like produces like."† He is also inclined to believe in a duality of species, "from this circumstance, that the nature, the pathology, the treatment, and the consequences of both sores are essentially different.‡

Mr. Byrne, of the Dublin Lock Hospital, also recognises two species of ulcer—one local, the other infecting.§ In Germany the same doctrine has been adopted by M. Sigmund, of Vienna, by M. von Baersprung, and many other eminent surgeons.

In my own practice, especially with private patients, I have had an opportunity in four cases of testing the truth of this law, and I have always found that infecting chancre transmitted infecting chancre, followed by constitutional syphilis. I also found in other cases that the non-infecting sore transmitted a sore precisely of the same species uncomplicated by any constitutional disease. In this country, from the absence of registration, it is obviously impossible to collect so large a number of observations as those referred to. But the comparatively few cases that have occurred in my own practice have been most striking, and for the most part in married persons.

Mr. de Merie has noticed five remarkable cases where he had the advantage of seeing and treating both patients for a long time. In four out of the five cases the parties were married, and in all of them confrontations showed that the infecting chancre had produced its like.‖

The law of relation holds good for non-infecting chancre also. In sixty-two cases of confrontation, a summary of

* Rep. p. 306. † Rep. p. 278. ‡ Rep. p. 270. § Rep. p. 481.
‖ Lett's Lect., London, 1858, p. 25.

which is given by M. Ricord in his lectures, non-infecting chancre was invariably produced by a non-infecting chancre.*

The results of the experiment are equally convincing. A syphilitic subject, as I have already observed, may be experimented upon without much impropriety. Inoculate such an individual with the matter of soft chancre, and the invariable result is soft chancre. I must, however, confess that this experiment is not free from objection, because the individual, having syphilis already, may be incapable of contracting an indurated chancre, which is one of the accidents peculiar to the disease.

Some additional testimony is derived from the observations of several surgeons examined before the Parliamentary Committee. Dr. Marston saw one case of inoculation with the matter of infecting chancre: it produced an infecting chancre.† Mr. Blenkins inoculated one, to clear up his diagnosis in a case of suspected chancre.‡ Like produced like.

On the other hand, inoculation of the same individual with the matter of hard chancre will produce little or no immediate effect. The *experimentum crucis* must be performed on virgin subjects, and in them inoculation with the matter of non-infecting chancre gives rise to a chancre of the same species. This latter experiment has been performed so frequently by independent men in various hospitals as to leave no doubt on the mind of any candid observer. Inoculation of a virgin subject with the matter of hard chancre likewise produces hard chancre; but the experiments, so far as I can learn, have been very few. Inoculation of virgin subjects with the matter of secondary lesions also developes indurated chancre at the points where the poison has been inserted.

* M. Ricord, l. c., p. 100. † Rep. p. 22. ‡ Rep. p. 177.

I trust that I have now established, in a satisfactory manner, the two chief points of the modern doctrine.

The theory of *unicity* need not be referred to, as I have shown, when explaining the laws of constitutional syphilis, that an individual can be affected by the disease *once* only. I cannot, however, conclude without again remarking that we do not pretend that these laws are universal. Exceptions, either real or apparent, occur every now and then. They are few, and the nature of the subject renders them inevitable; but I may safely assert that, in the whole range of pathology, no laws present fewer exceptions, or have been established on a firmer basis.

CHAPTER VIII.

SYPHILITIC ERUPTIONS.

Mercury does not Invariably Prevent Secondary Symptoms—Modes of Development—Early or Premonitory Symptoms—Intensity of Disease Varies—Chronological Order—Tumefaction of Glands—Roseola—Copaibal Roseola—Lenticular Form of Erythema—Alopecia—The Mucous Patch.

We now arrive at the consideration of constitutional syphilis—the transition or transformation of what may seem to be a purely local disease into a general or constitutional affection. I use the expression "What may seem to be a purely local disease," because I believe that from the first appearance of induration in a chancre we have to deal with a constitutional affection, and that when the true character of the sore is well defined, no kind of treatment, whether local or constitutional, will infallibly prevent the development of constitutional syphilis. I have more than once in this hospital circumcised a patient affected with hard chancre at the extremity of the prepuce. Every precaution was taken, a perfectly clean scalpel was employed, and the cut surfaces were brought together by sutures. But in each case the cut surfaces were subsequently transformed into indurated chancre,

followed in due time by the ordinary symptoms of constitutional syphilis.

In like manner, as regards treatment, no amount of saturation with mercury will infallibly prevent syphilis from running through its stages, however early the remedy may be administered. It may retard the appearance of secondary symptoms, it may modify their intensity, but I am convinced that it never entirely averts those general manifestations of blood-poisoning, of which many examples will be brought before you.

Commencing with the induration of the primary sore, and the specific engorgement and induration of the superficial inguinal glands, constitutional syphilis manifests itself under two distinct forms, named secondary and tertiary syphilis. The cases to which I propose directing your attention to-day are examples of the secondary form; and I may repeat that the constitutional affection can only arise in one of the following ways. It may, and most commonly does, result from primary infection, that is, from an indurated chancre. It may also arise from secondary contagion; that is to say, a secondary lesion may infect by contact a sound individual, and give rise to a hard chancre, the latter, in its turn, producing secondary syphilis. Thus a healthy wet-nurse may be tainted by a syphilitic child, when the latter is affected with mucous patches on the lips or in the mouth. Any accidental abrasion of the nipple of the nurse will readily give ingress to the poison, and constitutional syphilis is the result. Several cases have also been reported by Rollet, where the disease was transmitted from mouth to mouth in adults, a secondary lesion on the lips of one individual having communicated a primary ulcer to the other. I had occasion, not long since, to see a case of this latter kind.

Case 2.—It occurred in a boy 14 years old, who was sent to me by a physician. On examination I discovered an ulcer behind the incisor teeth, presenting all the characters of indurated chancre. After close questioning I found that he had been in the habit of smoking the same pipe as another youth who worked with him, and who, it was afterwards ascertained, suffered from mucous patches of the mouth. Whilst under observation my patient became covered with a pustular eruption very like small-pox, which rapidly improved under treatment, and when in this state I exhibited him at the Medical Society. I afterwards lost sight of him for some months, and when I next saw him it was at this hospital, having on the former occasions examined him at my own house. He was a good deal astonished at meeting me; he had for some months been in the workhouse, and he was now affected with rupial sores on the face, body, and extremities.

Secondary affections, again, may develop themselves, spontaneously as it were, in the offspring of a syphilitic parent. The hereditary taint is more frequently transmitted through the mother than through the father, although sufferers from each kind of contamination present themselves too frequently.

In dealing with secondary syphilis, I shall illustrate my remarks by selecting, as far as possible, patients who have not been submitted to any treatment at all. Such patients will furnish us with the most characteristic examples of the results of syphilis; of the periods at which the secondary manifestations may be expected; and of the intensity of the disease, in its various stages, when uninfluenced by remedies.

On carefully observing such cases, you will soon learn that the early symptoms of the constitutional affection are much the same in all our patients—differing, for the most part, in severity only. As the constitutional affection progresses, this difference becomes more striking; yet in some individuals the course of the malady is benign, while in others the constitutional symptoms assume a severe or even dangerous character. I need hardly observe that this

difference, which is supposed to depend on individual idiosynerasy, presents itself in other constitutional affections. Take small-pox, for example. Three individuals have been infected from the same source, yet one may escape with hardly a blemish, the second may be disfigured or lose his sight, while the third dies. So it is with syphilis. One patient gets well without any remedy, another will require a long course of treatment, while a third may continue affected for life, in spite of all our care. A single day's observation in the out-patient department of a large hospital will verify this statement. The term Idiosynerasy, as I have said, is employed to explain these differences; but it merely veils ignorance. The truth is, we can never affirm with any certainty that the course of the disease will be mild in one patient and severe in another, yet we may sometimes venture to predict what the probable results will be. For instance, it has seemed to me that well-marked, extensive, and obstinate induration of the primary sore is often followed by a severe train of secondary manifestations. I have frequently observed, likewise, a remarkable coincidence between phagedenic chancre and the early occurrence of severe rupial or ecthymatous ulcers. Again, if the subject of the disease be scrofulous, we have reason to apprehend that the secondary lesions will assume a character of great severity. An acquaintance with the family history of numerous patients in private practice has also suggested to me the idea that the secondary stage of the disease is long and obstinate whenever the seed of the complaint has been sown in what one might call virgin soil; that is, in an individual sprung from a race which has long remained untainted.

The history of small-pox furnishes something analogous to this, showing how widely and how severely the disease

may prevail when a nation is for the first time exposed to its ravages. This apparent influence has, moreover, been observed by our army surgeons during the Continental war at the commencement of the present century. In Portugal, where the disease had prevailed extensively and for a long time, it appeared to have lost much of its virulence amongst the natives, and to have been exhausted. The British soldiers, on the contrary, arriving fresh and in excellent health, were attacked in large numbers, while the ravages of the disease were extensive and dreadful.

The constitutional effects of syphilis have been distinguished into two classes, the secondary and tertiary; but the subdivisions of these classes adopted by different surgeons are not always the same. For my part, I shall take the natural or chronological order—that is to say, the order of time in which the various constitutional symptoms commonly present themselves.

Dating from the cicatrization of the hard chancre, M. Ricord states "that the manifestations of syphilitic intoxication are never delayed beyond six months." Where no anti-syphilitic treatment has been adopted, this is undoubtedly true; but the period of cicatrization is an uncertain point to start from; the time of healing itself is often uncertain; besides which we frequently observe abundant secondary manifestations before cicatrization of the ulcer has taken place. For my own part, therefore, I prefer dating from the appearance of specific induration of the sore and of the inguinal glands. Generally speaking, the early secondary symptoms manifest themselves from six to ten weeks after the appearance of specific induration, provided the patient has not been submitted to any treatment.

A general disturbance of the constitution, which formerly would have been termed premonitory, usually ushers in the

outbreak of secondary syphilis. These so-ealled premonitory symptoms are, however, part and pareel of the disease, beeause they frequently eontinue after the appearance of the earliest seeondary affeetion, or may even set in at a later period. They are not, on the other hand, eonstant; for about one-third of the eases of syphilitic eruption—the first in order of date—are not preeeded by the general disturbanee now alluded to. However this may be, the initial, general symptoms of seeondary syphilis resemble in many respeets those whieh attend the outbreak of several eonstitutional diseases, and are formed for the most part by a general, though irregular, febrile disturbanee.

The patient is out of sorts, or, as the Freneh better express it, he is "ill at ease," depressed by that general feeling of *malaise* not easily deseribed by words. He eomplains of debility, and is disinelined to move about; headaehe is often present, and then more or less febrile disturbance of an irregular kind, with neuralgie pains, manifests itself. These symptoms are now followed by pseudo-rheumatie pains, whieh are very charaeteristie. Even at this early stage, they are more severe at night than during the day. They are not confined to any partieular region of the body; but they are most frequently observed in the upper or lower extremities, and above all in the large joints. These articular affeetions are partieularly worthy of notiee, beeause they manifest themselves in the various kinds of blood-poisoning, and espeeially in that whieh arises from purulent infeetion of the blood, where they are more severe, and generally, though not always, attended by organie lesion.

Finally, at this early stage, and sometimes before the skin presents any appearanee of eruption, we have the one pathognomonie sign—posterior cervieal adenopathy. Whenever this eondition is unmistakably present, you may confidently

announce that some form of syphilitic eruption either exists on the head and neck, or will be speedily developed in these regions. The tumefied glands never attain a considerable size, seldom that of a haricot bean. They extend in a chain all along the posterior border of the sterno-cleido-mastoid muscle, are indolent, very rarely inflame, and hardly ever suppurate.

The immediate connection which exists between this condition of the cervical glands and the appearance of secondary affections has not been clearly explained. It may be one of the earliest general effects of the poison, or it may bear the same relation to eruptions on the face and head that tumefaction of the inguinal glands does to the primary ulcer. This latter explanation is adopted by some modern authorities, but, for my own part, I cannot accept it, because the glandular affection may exist totally independent of sore-throat or eruption on the scalp. It also frequently survives the disappearance of other syphilitic symptoms.

But let us come to one more immediate subject—syphilitic eruptions and affections of the mucous membrane. It is usual to follow the classification of Willan, and also to pass from the more simple to the more complex and severe affections. I prefer the chronological order, adhering, however, to Willan's classification.

The most common of syphilitic exanthemata, and the earliest in its appearance, is erythema. This eruption presents itself under two forms, one of which constitutes the well-known syphilitic *roseola*. I cannot better describe the general appearance of this eruption than by saying that it resembles in many respects ordinary measles. It may break out before the primary chancre has completely healed, and with so little disturbance that the patient is often unaware of its existence. Syphilitic roseola makes its appearance under

the form of pale red or rose-coloured superficial spots, which disappear completely under pressure of the finger. The blotches are more or less circular, and are often grouped together in crescentic arches, which closely resemble those of measles, and may lead to error, especially when the tinge is of a dull-red colour.

The usual seat of the eruption is on the chest and abdomen; seldom on the face, except the forehead, where some blotches, mixed with papulæ or small pustules, often present themselves. The eruption rarely extends to the hairy scalp, for in this latter situation the accompanying eruption is almost always either pustular or scaly. The hands, likewise, are generally exempt from the eruption, which is not attended by pruritus. This latter circumstance assists in distinguishing the syphilitic eruption from a curious affection known as "copaibal roseola," and produced by the administration of copaiba or cubebs for gonorrhœa. The two affections, however, are very distinct. Copaibal roseola is an acute exanthem; it is accompanied by more or less pruritus; it does not commence at the same points as syphilitic roseola, and never appears on the backs of the hands; it is manifestly aggravated by continued administration of the remedy; and, finally, it is never attended by any of those general symptoms, such as night-pains, &c., which are the consequences of syphilitic poisoning.

The second variety of erythema constitutes the papular form. The spots are of a deep red colour, often verging on a copper tint; they do not disappear under pressure with the finger; they are slightly elevated above the surface, and, on close examination, we often discover lenticular eminences formed by the diseased crypts of the integument.

These two forms are often mixed up together in such a way that it may be difficult to say whether the eruption be

erythematous or papular; or a considerable portion of the body may be covered by lichen, while the extremities are the seat of erythema.

This tendency of cutaneous syphilis to manifest itself under different forms at the same time in the same individual is one of the signs which most surely characterize the nature of the affection. Thus, while the trunk appears to be the seat of a common rash, a number of papules appear on the forehead, along the line of the hair. These are of a deep copper colour, and when the slight crust covering them has come away, they present a shining appearance which is very peculiar. When they cover the upper line of the forehead from side to side, they constitute the well-known, yet unenviable ornament called *corona Veneris*.

It is on the scalp, however, that irregular eruptions, superadded to the erythema, most frequently appear. M. Bassereau observed a pustular eruption of the scalp in 106 out of 153 patients affected with syphilitic erythema; in thirteen cases pityriasis existed; in four cases, scaly pustules; while the scalp was the seat of erythema (roseola) in two cases only. These and similar statistics are most valuable, as pointing out to us the peculiarities which in numerous cases attend the syphilitic exanthemata. The mixture of these various forms of skin disease may render it difficult to say which is predominant, but it is of great value as a diagnostic sign, for it is peculiar to syphilis.

Another early symptom, presenting itself about the same period, is alopecia, or falling-off of the hair. This curious effect of constitutional syphilis occurs almost as frequently as engorgement of the cervical glands, and, like the latter affection, sometimes precedes the eruption. The loss of hair is insignificant at first; as the constitution becomes more infected the hair falls off more abundantly, and some patients

become completely bald. These severe effects, however, seem to be connected rather with the development of crustaceous pustules or of pityriasis gaining the whole surface of the scalp.

The natural duration of roseola appears to be from five or six weeks to as many months.

The secondary eruptions of syphilis occasionally manifest themselves under all the protean forms of skin disease. I am, therefore, compelled to make my descriptions brief, and to reserve for a future occasion an account of those differential characters by which they are distinguished from non-specific eruptions of the same class.

The mucous patch (*plaque muqueuse*), mucous tubercle, or condyloma, as it has been variously called, succeeds next in chronological order to roseola. I prefer the term mucous patch, as the word condyloma has been used vaguely, some writers having applied it to warty growths, as well as to the proper mucous papulæ. The mucous patch has its seat in the skin, or in the mucous membranes, and the character of the eruption is somewhat modified by the nature of the tissue in which the lesion is situate. It is not a pustular disease, neither is it tubercular. The locality of this mucous patch is extremely various, and what appears worthy of remark is that the seat of the eruption differs very much in the male and female. In women the mucous patch is chiefly confined to the vulva, perineum, and neighbourhood of the anus; in males the disease manifests itself round the anus and scrotum, but it is likewise found on the lips, tongue, and soft palate. In a few exceptional cases—one in fifty, perhaps—the mucous patch has been observed between the toes, or in the axilla, in males; or on the upper part of the thigh in females. The mucous patch, then, is correctly designated, for it belongs

rather to the mucous than to the euticular system, and it is confined to those parts of the skin which are most analogous to mucous membrane.

Whenever we have an opportunity of watching the development of a mucous patch *ab initio*, we observe the following train of appearances:—A small circumscribed point of the skin or mucous membrane becomes red; this point soon extends in a circular form, within certain limits, and a small quantity of serous fluid is effused underneath the cuticle or epithelium, not enough to constitute a *bulla*, but sufficient to loosen and detach the superficial layer. The latter comes away in a few days, or is rubbed off, and underneath we perceive an evidently inflamed surface of a deep red colour, covered by a whitish secretion, which bears some resemblance to that of diphtheria, but is softer and much more easily detached, so that in many cases we observe nothing but a layer of serous fluid tinged with blood. If the inflamed spot be seated on the skin, the patch soon manifests its characteristic mode of development; the surface becomes elevated above the surrounding level, and forms a broad moist papula, which is often narrower at the base than on the surface. From this latter circumstance the term condyloma has been applied to the affection by many surgeons. I should observe, however—and the remark applies to almost every kind of syphilitic manifestation—that in practice we find numerous deviations from the typical form of the eruption. It is modified by the local seat of the disease; thus, between the fingers and toes the patch is very often irregular, fissured, and secretes a fœtid pus, which forms crusts and scales, whenever the base ascends above the level of the surrounding skin. In some cases the patch rapidly assumes the form of condyloma; in others, the contrary takes place, the papular character is

indistinct, and the eruption continues to present for some time the appearance of a simple patch not elevated above the surrounding surface. In many cases, again, the patches are confluent, and form large broad spots of irregular appearance; this is particularly seen on the scrotum.

I mention these varieties because, in a disease like syphilis, you will assuredly be led astray if you accustom yourselves to refer everything to a constant type, and imagine that Nature invariably conforms herself to the descriptions which you read in what are called standard works.

When the mucous patch is developed on a mucous membrane, it has little or no tendency to assume the condylomatous form. The surface of the papula remains flat, though slightly elevated, is of a bright red colour, and is covered by a thin pellicle of a peculiar dull-white hue. When seated on the tongue, the patches are often fissured; when on the tonsils they are often accompanied by tumefaction of the glands and inflammatory action.

Finally, either from accident or spontaneously, these mucous patches may ulcerate, and give rise to irregular sores, the nature of which can only be determined by accompanying circumstances. When the mucous patch is attended by acute inflammatory symptoms, as often occurs in cases of syphilitic angina, the neighbouring glands may become enlarged; but it is highly probable that this tumefaction does not partake of a virulent character.

Like most other secondary affections, the eruption is chronic. If left to itself, it will ordinarily continue many months, gradually declining and disappearing at last, or terminating in vegetations. On the other hand, this form of syphilis is very amenable to treatment.

As it occurs frequently, and presents many varieties of aspect, it may be well to say a few words regarding *diagnosis*.

The only skin affection with which the mucous papulæ is liable to be confounded is eczema, when situated around the anus and along the perineum. In all other cases it may be recognised by the absence of scabs on the surface, which is covered by its peculiar opaline pellicle; by the form of the surface, sometimes slightly elevated, sometimes condylomatous, and by the locality of the eruption.

CHAPTER IX.

SYPHILITIC ERUPTIONS.

Lichen—Seats and Varieties of—Vesicular Eruptions—Varicella—Herpes—Eczema—Scaly Eruptions—Psoriasis—Lepra—Pustular Eruptions—Ecthyma—Impetigo—Acné—The Bullœ—Rupia—Tubercular Eruptions—Gummy Form.

Lichen.—We now come to the lichenous or papular form of syphilitic eruption, which is not uncommon, though less frequent than erythema and its varieties, and which it often follows in chronological order. Dermatologists have described three species of this affection—the lenticular, the conical, and the miliary. Of these the lenticular form is the one we most commonly meet with in practice, although it is the conical variety to which the term lichen is more usually applied. Syphilitic lichen is sometimes ushered in by some of the general symptoms already noticed as resembling those of eruptive fever. For several days before the appearance of the eruption, the patient complains of headache, lassitude, &c.; and more or less febrile disturbance exists, accompanied during the night by pains in the large joints or bones. The fever continues for several days, and subsides on the outbreak of the eruption.

At this period we often likewise observe the special indu-

ration of the lymphatic ganglia—the lateral cervical glands, and in a few cases those of the axilla, which become indurated either before the eruption has appeared, or immediately afterwards.

The elementary *seat* of lichen appears to be the superficial layer of the skin, for the enlarged papillæ are first noticed around the follicles of the hair. As to the *locality* which it affects, you will find the eruption mainly developing itself on the trunk, especially the abdomen, or arms, and then extending to other parts of the body.

The *lenticular* variety of lichen has been well named, for the enlarged papillæ resemble a lentil both in size and form. The eruption is sometimes discrete, at other times confluent, and in the latter case the papulæ are often grouped together in irregular or circular patches of the size of a sixpence. The same grouping will be observed in the conical form of lichen also, the enlarged papilla of which is prominent and its apex is sometimes broader than its base, but the prominence is less marked than in the former variety.

In its earlier stage the lichenous eruption is of a pale red colour. As the eruption advances the colour becomes deeper, and it finally assumes a copper tint, which continues to the end. This copper hue is especially observed on the legs. The duration of lichen is more or less chronic. When not disturbed by treatment, the lenticular form lasts from five or six weeks to several months, while the miliary is more chronic still. The eruption always terminates by resolution, but, in several cases, before this occurs, the patches may desquamate, and if they present a circular form, the disease at this stage may be mistaken for psoriasis, especially when the scaly groups are the seat of itching, as is generally the case.

The miliary form of lichen has been rejected by many dermatologists, who regard it as belonging rather to pustular

affections. The patient now before us may, however, be considered as presenting an example of miliary lichen. The small papulæ or their groups are thinly scattered over the whole body, and in this case you may observe that some of the spots are covered by very thin scales, while others contain a minute quantity of serum, the presence of this fluid in some of the papules accounting for the appearance of scales in the others. When the lichenous papules have presented the appearance now described, they often leave indentations of the skin after them, resembling false cicatrices. The patient before you presents a good example of this; the skin is indented at every point where a papula existed, but the change does not constitute a true cicatrix, for the indentations will disappear in a few months.

Vesicular Eruptions.—As we follow the chronological order, we must take up vesicular eruptions here; for, though very rare, they occur at an early period of constitutional syphilis. They embrace three species—viz., syphilitic varicella, herpes, and eczema. Some writers doubt whether the two latter species should be ranged under the vesicular; but the best authorities do so. I may mention that the eruption appears within a period varying from one to six months after contagion; such, at least, were the limits observed by M. Bassereau in the twelve cases which fell under his observation. Syphilitic varicella presents itself under the appearance of a mild exanthematous eruption, and is generally, if not always, a primary form—that is to say, does not succeed any other kind of syphilitic skin disease.

It is preceded, for a few days, by general febrile symptoms of a trifling nature, which subside when the eruption breaks out. The latter usually commences on the chest by the appearance of small red spots, disseminated here and there, and soon extending to other parts of the body in a slow and

gradual manner. On each spot we soon find two or three regular vesicles, resembling those of common varicella. The serum may be absorbed, and the vesicle terminate by desquamation; or the fluid may assume a purulent character after eight to ten days, and the vesicle become covered by a slight scab.

The gradual progress of the eruption, taken as a whole, is worthy of notice.

The syphilitic eruption, though externally resembling common varicella or modified small-pox, always presents the special character of progressing slowly by successive outbreaks, which continue for three or four weeks together. This will afford a valuable element in forming your diagnosis. On the parts where the eruption is fresh, you will see small red spots; at other parts, the spots are converted into vesicles, surrounded by a red aureola; in other situations, again, and after the lapse of eight or ten days, some of the vesicles may become purulent, and assume the appearance of modified variola, in which case the pustules are surrounded by a dark aureola, often presenting the copper colour so characteristic of syphilis.

This is a mild form of eruption, never returning after it has completely subsided, and never terminating in ulceration.

I have a patient attending me now with the eczematous variety, but I regret that I am unable to show him to you. He attended the hospital three years ago with a chancre, and was also treated for secondary syphilis. At the present moment he has a secondary ulcer on the lip, and well-marked engorgement of the cervical glands. In addition to these symptoms, we find several large patches of eczematous eruption on the backs of both arms, and on the backs of the hands. The vesicles have given way, a small quantity of serous fluid has escaped from them, and the patches are consequently covered with a thin, yellowish incrustation.

This case is particularly worthy of attention. It shows how an early secondary symptom may be sometimes deferred so long as three years after the initial lesion.

Cases of this kind, however, are very rare; and it is still more rare to find the contrary take place—that is to say, to observe a late tertiary symptom so advanced as to occur within a few months of infection. Indeed, I might say that this never occurs except in cases of what are called malignant syphilis.

Syphilitic *Eczema* is characterized by the manner in which the vesicles are grouped together, instead of being disseminated, as in the variety just described. It most commonly occupies the face, scrotum, or front part of the arm. If the fluid contained in the vesicles be absorbed, the spots become dry and are covered with thin epidermic débris, somewhat resembling scales. On the other hand, should the vesicles end in pustules, the spots, at its close, are covered by thin, yellowish, and irregular scabs, such as you have seen in the patient whom I showed you a little while ago.

The *herpetic* form, like its analogous eruption in ordinary skin disease, may present the appearance of herpes circinatus or herpes phlyctenoides. The vesicles of herpes circinatus are very small, and are collected together in round or oval groups; the vesicles of herpes phlyctenoides are much larger, and form irregular groups, chiefly occupying the fore-arm and legs. In some cases, however, you will find this form on the scrotum, where it is troublesome, being attended by some pain and itching.

It has been obesrved that the early eruptions of constitutional syphilis generally present a more or less acute character; but such is not the case for the vesicular. Here the eruption, though in a few cases somewhat acute, always becomes chronic, and terminates in resolution, or in slight

ulceration of the epidermic surface. It rarely disappears before a couple of months, and may last for five or six.

Squamous Eruptions.—The class of scaly or squamous eruptions has been rejected by many of our best writers, as never representing elementary forms of skin "disease;" and the truth is, they generally represent the terminal phases of several eruptions, which become more or less scaly as they fade away and draw towards their end. I mentioned this when we were examining a patient affected with syphilitic lichen. The papulæ of this eruption, and the spots of erythema, often become scaly before their complete disappearance.

I do not know whether I should include amongst eruptions of the skin the well-known scurfy affection of the scalp, called pityriasis; indeed, I would have passed it over, were it not attended by a symptom which always produces more or less impression on the mind of the patient. I allude to falling off of the hair. Pityriasis is characterized by the separation of small epidermic scales from the hairy scalp in the form of an abundant whitish powder, sometimes dry, at other times moistened by secretion from the follicles. If you examine the scalp carefully, you will very often find a number of papulæ or erythematous patches scattered over its surface. The fact is, that pityriasis is an early symptom, but in conformity with the authorities we are compelled to class it with scaly eruptions.

The loss of hair attending this form of eruption need not disquiet you, or alarm your patient. It will grow again, for the lesion is superficial.

Psoriasis.—In describing scaly eruptions, it is impossible not to be struck by the fact that we lay aside the principle on which Willan's classification is founded—that is, we neglect the elementary form of the lesion, and take as our basis

a secondary character. This remark applies to syphilitic *Psoriasis.* In many cases the patches are superficial, but in many others the thick firm scales have been formed over irregular pustules on the groups of a primary papular eruption.

Psoriasis has been distinguished into several varieties, named according to the forms which the patches assume. Without entering into details, we may say that some are broad and irregular, while others are small and more or less circular. The size of the patches or spots is very various; they may be observed all over the body, but they usually affect regions which are not commonly the seat of ordinary psoriasis. Thus, while common psoriasis has a predilection for the elbows and knees, syphilitic psoriasis is found on the flexor aspect of the fore-arm, on the palms of the hands, and sometimes on the soles of the feet. The nails themselves are sometimes affected; they are raised into ridges, and the matrix is occasionally attacked by ulceration. This form of psoriasis is called onychia.

When psoriasis attacks the palms of the hands and the soles of the feet, it is commonly a late manifestation; the eruption resembles severe forms of the non-syphilitical disease; the skin covering the parts becomes thick, harsh, and tough; the cuticle then cracks and peels off in irregular patches, leaving the surface tender.

The folds of the skin on the fingers and toes present a peculiar appearance; they are dull red at first, then of a deep copper colour, readily distinguishable from the bluish tint which common psoriasis presents in these regions. Syphilitic psoriasis usually lasts for many months, and is by far the most obstinate form of the secondary eruptions, being, in many cases, peculiarly liable to relapse.

Lepra.—Lepra commences by groups of papulæ, which soon run into one another, and arrange themselves in well-defined circles. The skin within the circle remains perfectly healthy at first; sometimes, however, it becomes slightly raised, and covered by thin scales, very similar to those of psoriasis. Indeed many writers consider lepra as nothing more than a form of psoriasis. However this may be, I have observed that it differs from psoriasis, in being much more amenable to treatment. Lepra, or a form of eruption resembling it, sometimes assumes a gyrate form, very characteristic of syphilis. A succession of incomplete rings spreads out from a starting-point, and constitutes an irregular group.

Pustular Eruptions.—Some of the secondary, and most of the tertiary forms of syphilis have a tendency to end in suppuration and ulceration. In some cases the initial form of the ulcer is a papule, in others a vesicle, in others, again, a tubercle; but the true pustular eruption is that which presents from the commencement a pustular form; and of this kind I shall now proceed to speak.

Syphilitic pustular eruptions may be arranged like the ordinary, under three species, viz., ecthyma, impetigo, and acné. In point of frequency they seem to occupy a place next to roseola, and the papular form. Ecthyma is the most frequent form of these pustular eruptions. It shows a marked preference for the scalp and legs, but in some cases the eruption is general, and is preceded by more or less febrile action.

This latter is a form which resembles small-pox, and was formerly called syphilitic variola. The resemblance of the two affections is undoubtedly great. I have had patients labouring under true small-pox sent to this hospital by medical men to be treated for syphilis, and more frequently

still, I have seen patients with syphilitic ecthyma who were confidently pronounced to have had small-pox.

Ecthyma affects by preference the hairy scalp and the legs, though it may extend to other parts of the body, the pustules being isolated, or collected together in groups. They commence by the appearance of small red spots, which are soon converted into pustules, surrounded by an inflammatory arcola. The pustules vary in size, sometimes small, and not more than a tenth of an inch in diameter, often broad as a fourpenny piece. The areola surrounding the pustules, when completely developed, is of a deep red or coppery colour. The pustules soon terminate in ulceration. Here we shall find considerable difference in the intensity of the affection, for the ulcers are sometimes small and superficial, at other times large and deep. In this latter case we have a deep, clean-cut ulcer, furnishing pus, which concretes into a thick large scab of peculiar appearance, as if formed by concentric layers. The scars left by these deep ulcers are permanent, but they are not puckered like those of variola ; for the first few months they are of a deep red, bluish, or copper colour, and finally leave a dull, whitish spot, which never disappears, I should mention, however, that the scars of the superficial ulcers, which have not destroyed the cutis, are often somewhat puckered, like those which follow vaccination, and also, that the deep ulcers are described by many writers apart, under the name of pustulo-crustaceous eruptions. We have an example of this latter affection before us. The patient has a well-marked eruption on the forehead, consisting of these confluent pustules, covered by their thick, dark-brown crusts.

Impetigo comes next in order of frequency. Here the pustules are small, not larger than a millet seed, and hence often called the miliary pustule. This form does not

present any well-marked syphilitic characters. It occurs most commonly on the face and scrotum, round the roots of the hairs, &c. The eruption varies much as to its intensity in different cases. It may be mistaken for common impetigo when the pustules are few in number, not much inflamed, and covered by scabs of a yellowish colour. In other cases the disease assumes a more severe character, and constitutes a pustula-crustaceous eruption. The base of the pustule in this form is hard, the areola is of a dark colour, the crust greenish, and underneath we find a deep ulcer.

It is not to be understood from what I have said that the pustules always remain distinct, and separated from each other. At an early period of the eruption this may be the case, but, as the affection progresses, the pustules become confluent, and are found in groups, which appear in successive outbreaks on different parts of the body.

This latter circumstance will be of great assistance in forming a diagnosis, whenever the case may be difficult; for if we examine the eruption in its successive stages—pustular in one part of the body, crustaceous in another—and marked by the peculiar cicatrix in a third part, the characters of this cicatrix will enable us to decide with tolerable certainty on the nature of the disease.

Acné is the least frequent of the pustular eruptions. This form is characterized by the small size of the pustules, and by their slow tendency to produce scabs. It commences generally on the face or neck, from which, like the other forms, it may extend to other parts of the body; differing in this respect from the common acné, which is usually confined to the face, shoulders, and back. The pustules of syphilitic acné are seldom confluent, but they are collected in groups on those parts of the body which they

specially affect, viz., the face or legs. They are purulent at the summit, indurated at the base, are surrounded by a red areola, and are about the size of those of modified small-pox, which they resemble in many respects.

The progress of the pustules is, however, slow. Some time may elapse before they become covered by scabs. The latter are small and dry, and of a yellowish-brown colour. When the scabs are removed, we may, in some few cases, find a superficial ulceration beneath them; in the majority of cases, nothing but a well-marked copper-coloured spot. Should a cicatrix, however, have formed, it is small and round, slightly depressed, and quite different in appearance from that of common acné. Pustular eruptions, especially the severer forms, are slow in their progress, and often continue for several months, in spite of the most careful treatment. This is a point which you should not forget. Attention to it will prevent you from giving any hope of a hasty cure, which the result of the case will certainly prove to have been unfounded.

Bullæ.—Syphilitic bullæ constitute a rare form of secondary eruption; I shall, therefore, pass them over rapidly. I have never seen a case of syphilitic pemphigus myself. The bullæ occur either as pemphigus or as rupia. Pemphigus usually occupies the palms of the hands, the soles of the feet, and the arms. The eruption is constituted by the appearance of a few bullæ, from two to five or six, oval or irregularly rounded in their form, which contain a serous fluid or serum tinged with blood. The bullæ are sometimes discrete, sometimes confluent. The actual duration of the eruption has not been determined, as, in the few cases recorded amongst adults, treatment was always had recourse to.

Pemphigus terminates by resolution. The epidermis

becomes detached, and the seat of the lesion is marked by a dark or copper-coloured spot, which gradually disappears. In children, however, the bullæ often end in ulceration.

Rupia.—Although rupia is probably a tertiary symptom in point of time, it is much more frequent than pemphigus. The eruption commonly occupies the limbs, and is never extensive, being formed by a few bullæ, and sometimes even by one. The formation of the bullæ is preceded by some redness of the skin; a serous fluid is then effused, and in a few days the bulla enlarges to the size of an inch or so. It is rather flattened than spherical in form, and continues in this state for three or four days, when the contents are discharged, and we now find the spot surrounded by a dark red or copper areola. Whatever the contents of the bulla may have been, the result is the formation of a peculiar scab or crust, for the bulla has now terminated in ulceration. This crust is of a greenish colour; it is prominent and conical, with a somewhat irregular surface, as if formed by concentric layers. On removing the scab, we find a deep ulcer underneath, and in proportion as the ulcer deepens, the scab sinks down. The progress is now very slow; the scab may remain attached to the ulcer for months together, but at last a reparative process sets in, and the ulcer heals. The cicatrix presents some peculiarities worthy of notice. It is depressed, and sometimes very deep-seated, and is tinged with the well-known copper colour of syphilis. This is true rupia, but the same name has been given to a pustulo-crustaceous eruption, which is much more frequent, occurs much earlier, and which, from the character of its heaped-up conical scabs, may be considered as rupial.

Tubercular Eruptions.—The tubercular eruption consists in the development of small, hard, rough tumours in the

substanee of the skin. Although of frequent oeeurrenee, the period at which it appears is extremely various. Tubercle may, in a few exeeptional eases, present itself not very long after the earlier symptoms, but in the great majority it does not appear until long after the initial lesion, as an intermediate or a tertiary symptom. The locality of this affection is likewise various; it is most frequently met with on some part of the faee, then on the trunk; next in order of frequency, on the extremities, and finally, on the hands and feet; but examples of tubercle on the two latter are extremely rare.

The faee is a favourite seat of this affection; and it is worthy of notiee that, although the tubercular eruption is subject to relapse, it seldom travels out of the locality in which it has been first developed. The mode of development of these tubercles is likewise various, and they present several aspects in regard to their form, size, and manner of arrangement. If detected at an early stage, they may not be larger than a pin's head, or a hemp seed, and under this form they generally occupy the face, or sides of the nose, but they increase slowly in size, and may become as large as a cherry.

The colour of the skin which covers the nascent tubercle is sometimes of a bright red. As the tubercles advance, the colour becomes a dark copper, sometimes almost black, from which circumstance, and from the shapes of the group, they have been called mulberry. The arrangement is also various. The tubercle may be single, but most frequently we find them in groups of a horse-shoe, or circular shape, in the latter case forming a regular ring, with the dark cicatrix in the centre. This peculiar arrangement is explained by the circumstance that the central tubercles fade, while fresh ones are developed at the circumference of the group. When

the eruption thus grouped occupies the face or sides of the nose, it has been called syphilitic lupus.

The surface of the tubercular tumour is sometimes smooth, at other times the tubercle is covered by a thin scab, or throws off abundant scales. From what has been said, it will appear that the term tubercular eruption more properly applies to those cases in which a number of tubercles are found either disseminated as single tumours over different parts of the body, or collected together in groups.

This distinction will furnish two varieties, the discrete or disseminated, and the confluent or grouped.

In the *discrete* form we find a number of single tubercles scattered over various regions, but more particularly affecting some part of the face, where they have a tendency to coalesce. If seen at an early period, the tubercle will be found slowly advancing from the deep layers of the skin, and discoverable by pressure only. It is indolent in most cases, but may occasion some uneasiness or even pain when seated on the face or lower extremities. When the tubercle has advanced near the surface, the skin assumes a dark red or copper colour, and becomes adherent to the growth, the base of which is somewhat engorged, and gradually blends with the surrounding tissues. Arrived at this stage, the tumour may remain indolent for a considerable time, and then commence to decline, especially under the influence of treatment. The tubercle gradually subsides, and seems to sink into the substance of the skin, throwing off slight scales from its surface, and it finally disappears, leaving a copper stain, or a peculiar slight depression, which seems to indicate an interstitial absorption or retraction of the tissues in which it had been developed.

This favourable termination does not always occur; the tubercle may suppurate and give rise to ulceration. In

some cases the ulceration is slight, and the sore becomes covered by a thin scab; in others the ulceration is more extensive, and penetrates deeper into the substance of the skin, giving rise to a cup-shaped sore, or a deep ulcer with perpendicular walls.

The most severe form under which ulcerating tubercle presents itself is that called *perforating*. This species is most frequently met with on the face and lower extremities. The tubercle is large and generally discrete. The ulceration commences in most cases at the surface, but in others it is preceded by softening of the body of the tumour. It may be a question whether these latter were not examples of gummy tumour, which has not as yet, and clinically speaking, been accurately distinguished from sub-cutaneous tubercle. However this may be, the perforating tubercle is usually found resting on an engorged yet somewhat œdematous base, in the centre of which the firm body of the small tumour may be distinguished. Here the ulcerative process commences, and continues to penetrate in depth, until the whole of the adventitious deposit has been destroyed, together with some portion of the surrounding tissue.

This perforating ulcer is frequently seen about the nose, lips, and cheeks; it has been observed on the penis; and in the situations now mentioned it produces great and irreparable mischief. The sub-mucous tissue is likewise the seat of perforating ulcer; but I shall describe this lesion apart.

The *confluent* tubercular eruption is characterized by the small size of the elementary constituents, and by the little tendency which they manifest to become ulcerated. The tubercles, when fully developed, seldom exceed the size of a lentil, and are collected into circular, oval, or imperfectly annular groups, presenting a horse-shoe group; but we often

find them grouped regularly on one part of the body and irregularly on the other. The colour of the tubercle is a deep copper, and as this tinge extends to the surrounding skin, the tubercular group sometimes presents the appearance of a large copper-coloured or dark spot. The tubercles forming these groups may become ulcerated superficially and throw off their scabs; but they frequently terminate in resolution. When this is about to take place, the summit of the tubercle becomes covered by fine epidermic scales; it gradually subsides, and finally disappears, leaving a dark-coloured spot for a long time after it. The tubercular eruption and the ulcers which ensue sometimes assume the *serpiginous* character. This form generally occurs round the joints, the extremities, or on the back and shoulders. A group of tubercles, for example, is developed on one of these regions: they ulcerate, and then heal: but while the reparative process is going on at one side of the group, fresh tumours are deposited at the other end, and ulcerate in their turn. This process may go on until the ulcer has crept round the whole limb or the joint, tracing a circular band, or a zigzag irregular furrow, which, writers say, may resemble one of the letters of the alphabet.

The confluent form of tubercular eruption is chronic, and often persists for a considerable time. It is most frequently seen on the face, particularly the nose, and on the upper extremities, in the neighbourhood of the shoulder; being a late symptom, it often coincides with the intermediate accidents or with those of the tertiary period.

The superficial gummy tumour, formerly confounded with tubercle, under the name of subcutaneous tubercle, is now supposed, though not yet ascertained, to be a special product seated in the cellular tissue, underlying the skin or mucous membranes. The tumour has been named gummy from the peculiar thick viscid fluid which it sometimes contains, before

ulceration has set in—a fluid somewhat resembling a strong solution of gum.

The exact difference between this gummy tumour and the tubercular form already described has not been clearly made out yet. They have many points in common, especially if we regard their clinical history; and it seems probable that they constitute varieties of the same species. The clinical history of the two affections must undoubtedly be very much the same, because they have been confounded in the same description by many of our best observers in modern times. However this may be, superficial gummy tumours commence by the development of small, deep-seated tumours in the cellular tissue underneath the skin or mucous membranes. When detected in the early stage, they are hard and indolent, rolling under the skin, yet seeming to be connected with the deeper parts by a kind of pedicle. The tumours vary in size. They are sometimes small, not larger than a pea or a nut; sometimes large as even an orange or an egg.

They are disseminated as single tumours over various parts of the body, or may be collected together in groups, but in this latter case it has been observed that they do not assume the semicircular or horse-shoe shape of the tubercular eruption. When formed into groups, the gummy tumours principally occupy the limbs; when isolated, or merely collected in a small number, we find them on the face, about the nose, &c.

The sub-mucous tissue is also frequently the seat of the gummy tumour, and hardly any part of the mouth or fauces is exempt from this destructive deposit. They may be found in the amygdalæ, the isthmus faucium, the palate, the tongue, or inside the cheeks. I shall, however, reserve the consideration of ulcerative tubercle and gummy tumour for another occasion.

CHAPTER X.

DIAGNOSIS OF ERUPTIONS.

Specific and General Diagnosis—General Characters—Locality of Eruption—Its Form—Shape—Symmetry—Co-existing Symptoms—Special Diagnosis of Eruptions — Tubercular and Gummy Ulcerations.

The diagnosis of syphilitic eruptions may be considered under the two following heads. The *first* is a general diagnosis, and is comprised under the question, "Is the eruption before us simple, or is it syphilitic?"

The *second* may be called a special diagnosis, and consists in determining those particular or special characters by which any given eruption supposed to be syphilitic may be distinguished from its analogous form amongst ordinary skin diseases.

The general characters are those which are common to all forms of syphilitic eruption; and I may state, at once, that they are not to be depended on as certain signs of the nature of the disease.

They are to be looked for in the *locality* of the eruption—that is to say, in the situation which it occupies; in its *colour;* in its *form* and *disposition;* and in its *march,* or mode of progress. Several other circumstances, such as the presence of concomitant lesions, or the absence of certain

signs, as pruritus, &c., must also be taken into account. I shall likewise have to direct your attention to certain *tendencies*, which are not to be neglected.

1. *Locality.*

The *locality* of an eruption refers to the part of the body in which it is situated. The word *seat* should be confined to the elementary situation in the tissue attacked. Some forms of syphilitic eruption affect certain localities in preference to others. The mucous patch, for example, is mostly confined to the natural orifices of the body, or to those parts where two portions of integument overlap each other, as under the prepuce, &c.

Papular eruptions affect certain localities in preference to others. When the papulæ occupy the forehead, neck, or nose, we at once suspect a syphilitic origin. The same remark applies to the large pustules of ecthyma, when situated on the head, for ordinary ecthyma is very rarely found in this situation. Syphilitic psoriasis affects by preference the flexor aspect of the arms and hands. Common psoriasis usually occupies the extensor aspect, particularly about the elbow. Clinical observation teaches us that some forms of ordinary skin disease rarely affect certain regions of the body; hence, when we discover ecthymatous pustules on the scalp, or the small acneiform pustules on the legs, we may be pretty certain that we have to do with a case of syphilis.

2. *Form.*

The *form* or kind of eruption is sometimes so peculiar that little or no doubt can exist as to the nature of the disease. Thus, the mucous patch, which is one of the most frequent

amongst seeondary eruptions, has no analogue in ordinary diseases of the skin. Wherever the mucous pateh exists, there syphilis is present.

M. Bassereau remarks that the lentieular form of papular eruptions and several kinds of tubercles eonstitute speeial forms whieh do not exist in the analogous non-syphilitie affeetions. In the vesieular and pustular eruptions, we sometimes meet with eertain forms whieh reveal their syphilitie eharaeter. Thus, the syphilitie vesiele is frequently seated on a papula, eonstituting a form whieh is peeuliar to syphilis. The pustules of syphilitie impetigo rest on an elevated base not to be found in the ordinary form. Even the pustule of eethyma has a tendeney to extend in depth and beeome covered by a scab of a shape peeuliar to it.

3. *Colour.*

Next to the special forms just mentioned, the most eharacteristie of the general signs is the *colour*. The peeuliar eolour of syphilitic eruptions has been notieed by all writers sinee the first appearanee of the disease. Notwithstanding this general opinion, it must, I think, be eonfessed that the signs drawn from eolour are fugitive and uneertain. The eopper eolour is absent in the mueous papule; rarely and very indistinetly seen in some eases of erythema; although syphilitie roseola is usually eharaeterized by a yellowish stain, whieh is lost when the redness is displaeed by pressure. Finally, it is seldom well marked until a eertain period of the affeetion. Many forms, as the papular and pustular eruptions, whieh are of a dull red or livid eolour at first, do not present the peeuliar eopper hue until they have entered on the stage of desquamation. On the other hand, eertain forms of tubereular affeetion, and some pustules, present the

copper colour in a marked manner—the tubercle on its whole surface; the pustule with a deep copper areola, which is very characteristic.

Shape.—The *shape* of the eruption is not to be neglected. Certain forms have a great tendency to assume the circular or segmentary shape, and this occurs particularly in cases of tertiary syphilis, where the groups are circular, or composed of segments of circles, and extend in a serpiginous or gyrating manner. Too much stress, however, must not be laid on this circular or horse-shoe shape, for it occurs in scrofula and in parasitic affections of the skin. Still, the tendency is observable in most eruptions of a late period, where the grouping of the elements into segments of circles is often observed, but it is far from being special to syphilis. The gyrating shape is much more characteristic than the circular or horse-shoe.

Symmetry.—The symmetrical arrangement of the secondary eruptions has been included amongst the general characters of the syphilo-dermata by many writers on syphilis. Thus, when one tonsil presents a secondary ulcer, we generally find an ulcer on the other tonsil; when one side of the anus is affected with a mucous patch, we find another on the point immediately opposite to it. In such cases contagion may, perhaps, be invoked, but it does not apply to others not unfrequently met with in practice. In some of these the correspondence is very remarkable, or an evident tendency towards symmetry may be observed. This curious arrangement, however, is not special to syphilis. Mr. Paget has written an interesting paper on "The Symmetrical Arrangement" in blood diseases generally.

Taken singly, these general characters of locality, colour, or shape, are not, perhaps, of any great value, but when united in the same case they serve to establish its nature

in a satisfactory manner. Thus, if we find an eruption of tubercles, of a copper colour and horse-shoe shape, located about the nose or on the shoulders, we may be almost certain that it is syphilitic. The reunion of the three characters depending on shape, colour, and locality establishes the diagnosis in a sure manner.

There are certain other characters of syphilitic eruptions which I must not neglect to notice, although of minor importance. These eruptions are not stationary like many chronic affections of the skin. They have a tendency either towards resolution or to progress, and terminate in suppuration and ulceration.

Again, syphilitic eruptions—the mucous patch excepted—are not recurrent, at least under the same form, like ordinary cutaneous eruptions; and they are not accompanied by pain or pruritus. The absence of pruritus is one of those characters which should excite suspicion, especially in cases of popular and vesicular eruptions, and also in certain forms which might otherwise be mistaken for parasitic diseases of the skin.

I have reserved for the last the consideration of the two most important points in the diagnosis of syphilitic eruptions. These are the aids derived from the presence of concomitant lesions, and from the circumstance insisted on by M. Bassereau, that different forms of eruption are frequently observed at the same time in the same individual.

We know that constitutional syphilis is always derived from infecting chancre; your first care will, therefore, be to trace, if possible, the secondary effect to its initial cause. Make a careful examination of the patient, and endeavour to ascertain the true history of his case, and in certain cases of doubt bear in mind that the initial sore is not always confined to the locality of the genital organs. It may have been

situated elsewhere. The nature and locality of the concomitant or pre-existent symptoms which you have to inquire after will be mainly determined by the period of the malady. The symptoms are developed in a certain order and at various periods. Bearing in mind, then, the two circumstances of order and time, you will have little difficulty in deciding what co-existing or antecedent lesions are to be looked for.

I have thus endeavoured to illustrate the diagnosis of syphilitic affections of the skin by a consideration of their general characters, and of some coinciding particularities which are of great assistance. But these general characters are not always sufficient in doubtful and difficult cases. Here we must have recourse to the second method, which consists in comparing each particular form and species of the affection before us with the analogous kinds found in non-specific diseases of the skin. But, if this method be more certain in its results, it is more difficult in its application, because it requires an intimate knowledge of the characters of skin diseases at every stage and in their diversified forms.

Ordinary erythema or roseola may be mistaken for the syphilitic affection, if we content ourselves with a superficial examination, and look to the colour and form of the spots only. But I have already warned you against trusting exclusively to these general characters. You must compare and analyse in doubtful cases, and will then find that the syphilitic form is almost invariably accompanied by some other symptom of constitutional syphilis; that the eruption is not attended by fever, though it may have been preceded by slight febrile disturbance of a few days; finally, that its march is essentially chronic, when not disturbed by an anti-syphilitic treatment.

Papular Eruptions—.Generally speaking, the diagnosis of

these eruptions is not difficult. They are characterized by the prevalence of the copper colour, and by their elementary form. This, however, chiefly applies to the eruption when completely developed; for, at the commencement and decline, the distinctive characters are not so well marked. Thus, in some cases, the papulæ have a tendency to desquamate towards the end of the eruption, and may then simulate a scaly disease; or, at the commencement of the attack, the syphilitic papula may be mistaken for certain kinds of lichen, which are of a dark colour, and are constituted by lenticular or prominent papulæ. They are to be distinguished by the absence of pruritus, the presence of concomitant syphilitic symptoms, and the difference in the progress of the two eruptions.

The diagnosis of lichen presents less difficulty than that of many other syphilitic eruptions. The early writers confounded it with tubercular affections of the skin, which this form may sometimes resemble; but the elementary form of tubercle, and the specific colour which it presents from a very early date, are quite characteristic.

Lichen must also be distinguished from acné indurata; here we look to the non-virulent complaint for the distinctive characters. The appearance and course of simple acné are very uniform. It attaches itself particularly to the upper part of the trunk, and has little tendency to abandon its favourite locality; it is what I might call a sedentary affection, and it leaves behind it a peculiar cicatrix.

Vesicular Eruptions.—Syphilitic and ordinary varicella may be easily mistaken for each other at a very early period. It will therefore always be prudent to wait a little, in suspicious cases, before you pronounce any decided opinion; for the external appearances of the two kinds are very similar.

Herpes circinatus, when of parasitic origin, also resembles the vesicular syphilitic eruption, especially when it is located on the forehead, when it may be mistaken for the corona Veneris. The parasitic form is to be distinguished by the itching which accompanies it, and by its peculiar mode of development, for the small spots progress from the centre towards the circumference. Syphilitic eczema is to be distinguished from the corresponding non-specific form by the absence of itching, by its chronic march, by the copper-coloured areola of its firm base, and by the appearance of the small dark or copper-coloured spots which it leaves behind it.

Pustular Eruptions.—As a pustular form of eruption is often one of the most severe and intractable, it becomes important to distinguish it; yet the diagnosis may be difficult in many cases. Acné comes especially under this head, great experience and discrimination being sometimes required to distinguish the scrofulous and arthritic forms from the syphilitic, when the latter occupies the forehead or scalp. In the first place, I would observe that, as acné is an early affection, we often find some other syphilitic lesion accompanying it. I need hardly remind you that the younger syphilis is, the more likely are its manifestations to be multiple. The locality of the eruption will also assist us, for common acné never attacks the extremities. Again, examine the seat and appearance of the pustule after removal of the scab. If the base be pabulo-lenticular, you have a certain sign of its syphilitic origin. If the base be surrounded by a copper-coloured areola, you have a strong presumption as to its nature. Common ecthyma resembles the syphilitic, especially when it occurs in unhealthy individuals; for in the latter the base of the pustule, together with the scab, may gradually enlarge under the influence

of the cachectic disposition. Here we must look to the presence or absence of syphilitic affections in other parts of the body as our chief guide. The violet or copper colour surrounding the sore will deserve attention. The areola of scrofulous ecthyma is rather bluish than of a copper colour, and its scab is of a much lighter shade. If the disease has proceeded to ulceration, you will observe that the syphilitic sore is deep and cleanly cut, while the scrofulous ulcer is loose and fungoid. The scars left by the two kinds of ulcer are quite different. Those of the syphilitic are round and depressed, while the scrofulous are elevated and irregular.

In cases of impetigo, the diagnosis is less difficult. When the syphilitic form occupies the scalp, or the chin, it may resemble scrofulous impetigo; but it does not present the broad yellow scabs of the scrofulous affection.

I have mentioned in a former chapter how patients have been sent to our hospital with common small-pox, under the supposition that they were attacked by syphilitic variola. The mistake is sometimes pardonable, for, in some cases of ecthyma, the eruption extends over the whole body, and has been preceded by general febrile symptoms. I would observe, however, that the febrile attack of syphilitic variola is much less severe than that which precedes confluent small-pox; besides which, it has a marked tendency to appear towards evening, in accesses like those of intermittent fever. Any mistake of the kind now spoken of can, however, only occur at an early period. In doubtful cases, the progress of the eruption will reveal its nature.

Scaly Eruptions.—Syphilitic psoriasis is perhaps the only one of the eruptions called squamous in which the elementary form is to be observed from the commencement of the attack, although, in a great number of cases, the scales supervene on

papulæ, pustules, and small tubercles. The distinctive characters of the syphilitic form have thus been laid down by one of the most eminent syphilographists, M. Bazin.

1. The surface underneath the scales is of a red copper colour.

2. The edges of the spot or patch are more elevated than the central part.

3. When the scaly patch has disappeared, it leaves a slight depression, or false cicatrix, behind it, arising from interstitial absorption of the skin.

4. The scaly eruption is commonly attended by other eruptions of a specific nature.

In addition to these characters, I would add that the scales of syphilitic psoriasis are much less dense and shining than those of the ordinary forms.

Bullæ.—Of the two elementary species, pemphigus and rupia, the former is so rare that you may never be called on to determine its nature in private practice. Rupia, or rather a rupial form of crustaceous ulcer, occurs much more frequently, and often presents itself in cachectic subjects.

The syphilitic form of rupia should be distinguished from the scrofulous. The following characters will assist the diagnosis. In scrofulous rupia, the colour of the scab is much less deep ; the areola, also, is not so well marked, being rather of a bluish tint. The edges of the ulcer are loose and fungous, while in the syphilitic form, the ulcer is clean cut and deep. The cicatrix is very different in the two forms of rupia. That from scrofula is pale and prominent ; the cicatrix from syphilitic rupia is depressed and copper-coloured.

Tubercular Eruptions.—As the syphilitic tubercle frequently terminates in ulceration, I shall avoid repetition by

comprehending together the diagnosis of tubercle in its solid and in its ulcerative forms.

The tubercular eruption, properly so called, will have to be distinguished from tubercular sycosis of a parasitical or scrofulous nature, more particularly when these affections are located in the face.

On comparing the syphilitic tubercle with parasitical sycosis, we shall discover several points of difference. The specific tubercle is not seated in the follicle of the hair, and hence the hairs are not loosened or altered by it. The colour of the tubercles is dull red or coppery, and they are grouped in circles or arcs of circles. They do not suppurate readily; whilst the tubercles of parasitical sycosis are disseminated through the beard, and soon suppurate at various points.

But syphilitic tubercle of the face bears a still greater resemblance to the analogous scrofulous affection, when the latter occupies the same locality. The form, locality, and disposition of both kinds are in each case the same. We must therefore look for other distinctive characters. The syphilitic tubercle is of a deeper colour, more approaching the copper, and it is more firm to the feel; while scrofulous tubercle (lupus) almost always manifests itself before puberty, and is characterized by its very slow and gradual progress. Its elementary tubercles are small, and of a dull reddish colour, without any brilliancy.

As tubercles often terminate in ulceration, it will be convenient to conclude these remarks by a consideration of the diagnosis of tubercular ulcers. Here the diagnosis is peculiarly difficult, for tubercular ulceration occurs at such a distance of time from the initial sore, that we are often unable to discover any co-existing lesions. We must depend on what we see before us, and this may perhaps be confined

to a single ulcerated point. The ulcers of lupus and cancer are those most likely to be mistaken for the tubercular. You will remember, however, that lupus almost always commences during childhood, that its progress is extremely slow, and that its locality is very circumscribed. The ulcer of syphilitic tubercle is circular, deep, and surrounded by a copper-coloured areola. The areola of lupus is dark blue, and the groundwork on which the ulcer rests is rather œdematous, than hard and knotty, like that of the tubercular form. Lupus frequently attaeks the nose. In such cases we examine whether the septum narium be perforated or not. If it be perforated, the lesion has probably advaneed from the mucous membrane to the integument, and is syphilitie in its nature.

As for eancerous uleer, it may be generally recognised by the induration of the tissues, the lancinating pains, and the tumefaction of the neighbouring glands. Nevertheless, venereal ulcers of the face have been often removed by the knife, after having been mistaken for cancer.

The greatest source of embarrassment is to distinguish extensive syphilitic uleeration of the fauees from scrofulous ulceration of the same part. In many cases, the two lesions bear great resemblance to each other, especially when the syphilitic ulcer occurs in a scrofulous subject.

The external eharacters will here be of little guide to us, for everything special has been swept away by the phagedenic action of the ulcerative process. On the other hand, as the lesion occurs at a late period, the co-existing symptoms are few, being mostly eonfined to exostosis and orchitis. As far as my own experience goes, I am disposed to say that the two forms may be distinguished at their very early stage, but that we have no means of arriving at anything like a certain diagnosis when the ulceration has become very

extensive, unless, indeed, it has assumed the perforating character.

At any rate, I would recommend you to follow Hunter's advice in such cases, and "exercise a prudent reserve," and, above all, I would add, abstain from the use of mercury. It is possible that an hereditary taint or the abuse of mercury may have something to do in the production of many of these ulcers.

Certain scrofulous ulcerations of the skin which attack its substance deeply, and are covered by thick scabs, also resemble, in some cases, syphilitic ulcers. The distinctions are well pointed out by M. Bazin in the following manner: "The brown-red colour of the elementary points — the lighter colour of the scabs—the fungous appearance of the ulcer and its detached edges—the ugly scars, which are vascular, prominent, and traversed by bands—the co-existence of caries of the bones—all these are signs which indicate the scrofulous nature of the ulcer."

On the other hand, the base of the ulcer in syphilis is of a greyish colour. It secretes a thick yellow or greenish matter. The edges of the sore are seldom loose, or of a livid colour, as we find them in scrofula; finally, the peculiar appearance of the scab alone is sufficient, in certain forms, to distinguish the true syphilitic ulcer from that of scrofula.

CHAPTER XI.

LAWS OF CONSTITUTIONAL SYPHILIS.

Sources of Syphilis—Infectious Nature of Secondary Symptoms—Constitutional Effects of the Poison—Period at which Secondary Symptoms Appear—Law of Evolution—The Four Periods of Syphilis—Law of Unicity—Relapses.

In the preceding chapters various points of doctrine have been more or less discussed, according to the subjects with which they were connected. It may be useful to collect these doctrines together, and resume them under the form of "laws," as this will give us not only a connected view of the whole subject, but enable me to explain many points of interest which have not been fully illustrated. Let us begin with the initial lesion.

I.

Constitutional syphilis is derived from the poison of infecting chancre, either *directly* or *indirectly*—directly, when from the chancre itself—indirectly, when from some secondary lesion, the result of infecting chancre. We have already demonstrated the fact that syphilis derives from infecting chancre. It now remains to show that the disease may be communicated by the poison of some secondary

lesion, which latter has been itself derived from an infecting chancre.

There is another mode in which constitutional syphilis may be communicated without direct or indirect contagion. It occurs in this way. A healthy woman gets married to a man affected with latent syphilis. She becomes pregnant. The child, when born, suffers under congenital syphilis, but in some unknown manner has communicated the disease to the mother during gestation. The following case, from my private practice, illustrates this fact:—

CASE 4.—A young woman, 23 years of age, was married two years ago to a patient whom I had treated for syphilitic ulcers on the lower extremities. He was cured and was married three months afterwards. The woman enjoyed good health during the first year after her marriage; she then became pregnant. At about the sixth month of her pregnancy an eruption broke out on the body; the throat became sore and ulcerated; the hair fell off; the sight was impaired. The child was born at the usual time, but died in four months from congenital syphilis. The mother at the present time (Dec. 1868) is suffering from a node the size of a large chestnut on the head of the fibula, with severe nocturnal pains in the leg. Several other cases observed by Mr. Hutchinson, Diday, and many other surgeons have established, beyond doubt, this mode of infection. I shall not, however, dwell on this point, as it belongs to another branch of the subject, viz. congenital and hereditary syphilis, which are not described in this work.

I have included infection from secondary accidents in this law, because the fact has been satisfactorily established. Mr. Hunter, however, believed that "the matter of secondary complaints did not contain the specific virus." M. Ricord adopted the same opinion until a few years ago. During a period of six years he performed no less than 518 experiments with matter taken from secondary and tertiary lesions, but failed to produce any result. He was led astray by his experiments, which were all made on

persons affected with syphilis, and these experiments necessarily failed, because, as we now know, an individual cannot have syphilis twice. This error of such a man as M. Ricord proves how essential it is that the doctrines respecting syphilis should be understood by all. M. Ricord has now yielded to evidence, only remarking that the cases are not numerous, and that it is the earliest secondary lesions which are most contagious.

Professor Virchow adopts this doctrine implicitly. "After having witnessed the inoculations practised at Wurtzburg, by Rinecker, I am fully convinced that the secondary symptoms are contagious." We may now ask, How far has this law been extended? What secondary lesions are contagious and infectious—what are not? This question can only be decided beyond cavil by experimental inoculation; and, as far as I can discover, these have have been few, about twenty in all, made by Mr. Wallace, of Dublin, Gilbert, Rinecker, and others.

The mucous patch appears to be the most easily inoculable of the secondary lesions; it has also been shown that the mucous patch may infect the system by personal contact in the ordinary way. Mr. Colles, of Dublin, was one of the first who, relying on clinical observation, maintained the doctrine that secondary symptoms are infectious. Inoculation from the matter of a secondary ulcer on the tonsils has produced indurated chancre, followed by roscola. Wallace inoculated the pus taken from a pustular eruption of the skin in two cases. The experiment was followed by roseola, and a squamous eruption in one case, in the other by a cutaneous eruption and condylomata. An examination of the several cases recorded by Wallace and his successors proves that the constitutional affections produced by the inoculation of the secondary virus are exactly

the same as those which result from the poison of indurated chancre.

This proves that the poison is not modified, as many writers still assert it is, by being disseminated in the blood. On analysing the published cases I find that, out of twenty-four, eight presented premonitory symptoms, sixteen were affected with roseola, ten with papular eruptions, seven with angina, six with pustular eruptions, five with scaly, and two with iritis.

Clinical observation also establishes the fact that several of the secondary lesions are capable of giving rise to constitutional syphilis. Many examples were related by some of the witnesses examined before the committee of 1864. M. Langston Parker has seen secondary lesions in a female produce indurated chancre in a virgin male.* This is an important point to bear in mind, in relation to doctrine; for it shows how a person with secondary infecting lesions, and a primary ulcer of a simple nature, may appear to have communicated the disease from that simple sore alone. Many of the apparent exceptions to the law which connects indurated chancre with constitutional syphilis, will, I believe, be traced to causes of this kind.

There seems to be only nine successful cases on record of inoculation with the blood of a syphilitic patient. They were followed by erythema—a tubercular eruption of the skin—roseola, a papular, and then a scaly eruption—roseola, and mucous patches. This brief account is sufficient to show that the blood of a syphilitic patient contains the true poison. The experiments are few, for every conscientious surgeon will avoid giving such a disease to a healthy person; and the secondary effects may appear to be few, because they were immediately cut short by an appropriate treat-

* Rep. p. 272.

ment. Tertiary syphilis has not yet been proved to be contagious.

II.

The constitutional disease is the almost *inevitable result* of the poison, whenever the latter has acted so far as to produce infecting chancre. This may seem a severe sentence to pronounce. It is not generally accepted, but I have given my reasons for adopting it, when speaking of infecting chancre.

III.

The *period* at which the first symptoms of constitutional infection appear is well marked, and circumscribed within narrow limits. M. Ricord concludes from his immense experience that the interval between the initial lesion and the outbreak of secondary symptoms is limited to six months at the utmost. The average limit, however, appears to vary from four to six weeks. Roseola is the earliest secondary symptom of constitutional syphilis, and from the date of appearance of this eruption we may fairly deduce an opinion on the point now discussed. Let me, therefore, mention a few hospital statistics, which are more valuable than any general assertions that I could make. In 107 cases of roseola, noted by M. Bassereau, at Ricord's hospital, more than one-half occurred between one and two months; and every case, except two, before the end of the third month.

Sigmund, of Vienna, after an examination of 1000 cases, states that the earliest secondary symptoms generally present themselves about the sixth week, and seldom later than three months.

In 307 cases analysed by Fournier, the period of the

eruption was most frequent between the fortieth and fiftieth days. Finally, in fifty-two cases occurring in his private practice, M. Diday, of Lyons, found the average period to be six or seven weeks. The natural progress of the disease had not been disturbed by treatment in any of these cases.

IV.

This may be called the law of *evolution*, and it is a most important one; viz., the various symptoms of constitutional syphilis are developed in a very regular order, one after the other. Hunter was well acquainted with this law, although he expressed it in his own quaint manner, by referring to orders of parts; some being the first order, others the second order, terms which correspond to our secondary and tertiary periods.

All clinical observers now admit the law which I have just laid down, and you cannot have attended this hospital for any length of time without having come to the same conclusion. You will not, I imagine, expect to find the complaint going like clockwork, but the regular order in which the various lesions are developed one after another is truly remarkable; nay more, is a circumstance of great importance, in a diagnostic point of view. By the word *order* I mean succession of phenomena, and not periods of time; for when we come to confirmed syphilis, the periods at which the late lesions may become manifest are very uncertain.

I have stated that the order in which the different symptoms succeed each other is better marked than the periods of time by which they are separated. For the earlier secondary symptoms the periods are pretty regular. Between the secondary and tertiary there are several affec-

tions, which may be called intermediate; because, if we count by time alone, they must sometimes be classed under one period, and sometimes under another. The same remark applies to the tertiary period, and still more to the quaternary period; for the longer the disease lasts, the more liable does it appear to lie dormant for years. The order according to which the symptoms of constitutional syphilis usually manifest themselves may thus be stated:—

Secondary Period.

Between the thirty-fifth and fiftieth days after infection some cutaneous eruption, often preceded by febrile disturbance, &c., appears. This eruption, whatever it may have been, is followed by other eruptions of various kinds during a period extending over five or six months. It is not to be understood, however, that all the eruptions comprised in this period follow one after the other in an unbroken series. The latter varies in different cases. In some we find a single form; in others two or three eruptions appearing at various intervals. There is, nevertheless, a well-marked tendency in this disease to observe a certain order in the periods of time between its successive manifestations. Following this arrangement, the secondary period may be divided into three stages, marked by the following symptoms, which I enumerate according to the order of time at which they usually manifest themselves.

1. Roseola; mucous patches; alopecia; one form of sore throat.

2. Vesicular, papular, scaly, and pustular eruptions; one form of iritis.

3. The late secondary or *intermediate* symptoms compriso

some irregular eruptions, superficial ulcerations of the tongue, psoriasis palmaris, and one form of sarcocele.

Tertiary Period.

In the tertiary period we find tubercular eruptions and ulcerations of the skin, deep gummy tumours of skin and muscles, deep ulcerations of the throat, affections of the bones and periostea, gummy tumours of the tongue, mamma or testicle, laryngeal phthisis. The last three affections belong to a very late period of the tertiary class, and may be deferred so long that we should arrange them in the quaternary period.

Quaternary Period.

This period embraces the stage of deep-seated visceral disease.

In the present state of our knowledge it is impossible to determine any order as to frequency or time in which syphilitic affections of the viscera may occur; but some interesting points have been already established.

V.

The fifth law of constitutional syphilis is the law of *unicity*. The disease occurs only *once* in the same individual. The exceptions to this law are so few that it may be said to be almost universal. Its existence, indeed, might have been inferred from analogy. Other poisons of a similar character, especially small-pox, occur once only. There are exceptions with regard to small-pox, and they are much more numerous than in the case of syphilis. It is worthy

of remark that this law of unicity seems to have been known to Hunter, although the fact has been overlooked by his commentators. Hunter states, in his peculiar way, that constitutional syphilis arises in consequence of a disposition in the parts to become affected by the poison. "When this disposition has been once established it cannot be destroyed." If it cannot be destroyed, we are entitled to conclude that it cannot be renewed, and hence to infer that the disposition is established once only. But this question has been fully decided by modern experience. M. Ricord, during the course of his long practice, has met with four cases only, and of these two were doubtful, for they consisted merely in the recurrence of indurated chancre, after a previous attack of syphilis. In the other two cases the second attack consisted in the appearance of indurated chancre, followed by bubo and secondary symptoms. I believe that I mentioned to you in a former lecture how I have once met with a case which seemed to me one of second infection.

CASE 5.—The patient, who was a surgeon, had an infecting chancre followed by secondary syphilis, the eruption on the skin assuming the pustular form. Six or seven years after, an ulcer having all the external characters of indurated chancre appeared on the side of a scratch which he had on the index finger of the left hand. The glands in the axilla became large and indurated; and within a few weeks, before the induration had disappeared from the finger, the patient was attacked with sore throat and a secondary eruption, which latter soon assumed a scaly form, viz., psoriasis. He was seen by a physician and by a surgeon, as well as myself, and they agreed with me as to the character of the sore on the finger.

The experience of other surgeons is equally decisive on this point. Mr. Hutchinson has met with one exception only. The patient had been treated by him for indurated chancre, followed by severe secondary symptoms. Two

years afterwards he had indurated chancre again, followed in a month by a mild roseolous rash.*

Dr. Hardie has also seen one case. It was produced by the poison from a mucous papule, and occurred thirteen years after the first attack.†

Mr. Byrne, of the Dublin Lock Hospital, likewise adopts the doctrine of unicity.‡

Mr. Langston Parker has never seen a case of a second attack.§

M. Diday appears to have observed more exceptions to the law of unicity than any other surgeon. During a period of six years he met with twenty-seven cases of a second attack of syphilis,‖ but from these twenty-seven we must deduct sixteen, which consisted in the appearance of chancre alone, not followed by constitutional symptoms. In nine cases the second attack was much milder than the original one; in two cases it was more violent.

Besides, the question has been determined by the results of experimental inoculation. These experiments have been performed in so many cases by different surgeons in various hospitals, that no candid person can remain unconvinced. Thus, take a patient affected with constitutional syphilis. Inoculate him on the arm with the pus taken from the chancre of another patient, who at the same time presents some early constitutional symptoms. No immediate result will follow, although, if the inoculation be repeated a great number of times, an ulcer may ensue. Yet even then the patient is never attacked by a second evolution of secondary manifestations. This experiment may be repeated any number of times, without impropriety, because the objection against inoculation of a virgin subject

* Rep. p. 288. † Rep. p. 162. ‡ Rep. p. 485.
§ Rep. p. 270. ‖ Arch. Gen. de Med., Juil. et Août. 1862.

does not hold good here. The patient has got the disease already, and his complaint will not be aggravated by an additional dose of the poison.

VI.

The constitutional symptoms of syphilis are subject to *relapse*—yet in so doing they almost invariably preserve their natural order. The relapse consists in the recurrence of some lesion several times before it finally disappears. Thus the mucous patch may recommence over and over again; and the early eruptions may become mixed, though in a feeble degree, with those of a later period; but you will observe that the reverse of this does not take place; the tertiary are scarcely ever advanced out of the natural order, so as to present themselves at an early period of the secondary. They sometimes do, in cases of what is called malignant syphilis. I have seen such cases myself; but although the period of time may be disturbed, the order of sequence remains unchanged.

You will find this law most useful in the diagnosis of many doubtful cases. The mixture of early eruptions with those of another form and of a later date is an almost certain sign that the affection is syphilitic.

CHAPTER XII.

MALIGNANT SYPHILIS.

Law of Evolution sometimes disturbed—Causes—Cases Illustrating the Course of Malignant Syphilis—Early Rupial Rashes—Bad Effects of Mercury — Vesicular Form — Tubercular Form — Gangrenous Form—Treatment.

We have seen how the evolution of syphilis takes place according to a certain order, proceeding from the exanthematous to the vesicular and papular eruptions, next to the pustular, and finally to affections of the fibrous or osseous systems.

But we occasionally meet with cases in which this natural order is disturbed. The outbreak of the disease is preceded by severe constitutional disturbance; the eruption is pustular or tubercular; it appears at a very early period, soon ends in ulceration or gangrene, continues for a considerable time, and occasionally terminates in death, independently of visceral disease. These characters give such a degree of *malignity* to this severe form of syphilis that it has been compared to the Neapolitan disease. In some cases, a malignant coryza exists at the commencement of this form, and it has been mistaken more than once for acute farcy-glanders.

The determining causes have not been ascertained.

Patients attacked by malignant syphilis do not present any peculiarly unfavourable conditions of general health. The only remarkable coincidence, according to my observation, is, that it is commonly preceded by phagedenic chancre; but this has not been sufficiently frequent to constitute a rule; besides, the same hidden cause which subsequently gives rise to malignant secondary affections may also impress its character on the initial lesion.

Many of the patients affected with malignant syphilis were young, from twenty to twenty-five years of age; and in the absence of any apparent determining cause, it may be asked whether an inherited taint may not have existed. This is a point to which attention should be directed. It has been suggested to me by Mr. Hutchinson, who has seen a case in which a young man of well-characterized inherited-syphilitic physiognomy had a chancre which inflamed, and was followed by a rupial rash.

The following cases will serve as an introduction to the remarks which I have to offer on this form of syphilis, which, in my own practice at least, has usually presented the characters of rupia, or of deep ecthymatous ulcers. Several of these latter are not examples of the fully developed disease; but they are worthy of notice as presenting a link between malignant and ordinary forms. I have had occasion to meet with many; the three following may be briefly related.

CASE 6.—*Phagedenic Ulcer—Malignant Symptoms—Rupial Eruption—Relapses—Destructive Ulcerations—Cure.*

May 19, 1865.—A rather delicate gentleman, aged 21, contracted an indurated chancre for the first time eight weeks ago. Mercury was administered by his medical attendant, but the ulcer inflamed, and assumed a phagedenic appearance. The remedy was continued never-

theless, and under its influence the phagedena extended. The patient lost flesh and strength rapidly, became pale and feeble; he also suffered much from severe rheumatoid pains and night sweats. The glands in the groin also became much enlarged, but did not suppurate. I saw the patient for the first time a month after the appearance of the chancre. The ulcer, which was situated in the fossa on the dorsum of the penis, was, I found, of considerable size, and covered by a black slough. It was distinctly indurated. The gums were tender, from mercury, and the throat was the seat of destructive ulceration, penetrating deeply into each tonsil. The scalp was nearly covered by ulcers, concealed under thick scabs, and ulcers of a similar kind existed on the back, on the left wrist, and a few on the left arm. They were covered by conical scabs, and presented all the appearance of rupia. These ulcerations in the throat, the sore on the penis, and the rupial spots were evidently spreading rapidly under the influence of mercurial treatment. Iodide of potassium, in five grain doses, combined with the same quantity of the potassio-tartrate of iron, was at once substituted for the mercury.

The most marked improvement at once followed this change of treatment. The slough of the chancre was thrown off, and the primary sore healed rapidly. The general health improved; the ulcerations in the throat and the rupial patches got completely well, under increasing doses of iodide of potassium; and a few weeks afterwards the patient left town apparently cured, taking at this time the iodide of potassium in half-drachm doses, which I ordered him to continue.

I lost sight of this patient for some twelve months, when I received a letter from his medical attendant in the North of England, stating that he was suffering from severe syphilitic ulcerations about the body and face, and especially the nose, where the ulcerative action had completely destroyed the alæ; that a mercurial treatment had been adopted after consultation, but that the ulcerations continued to increase, in spite of the mercury and of occasional small doses of the iodide of potassium.

The iodide was *resumed* in large doses, one scruple thrice a day; and its use was again followed by marked improvement. As soon as the patient was well enough to travel he came to town. At this period his face was much disfigured, and large scars were scattered over the body, covered in many cases by dry scabs. The tongue was much swollen, and superficially ulcerated, and the saliva was continually running from his mouth. He continued the iodide from this time for some months, without much apparent benefit, save that the ulcerations did not open afresh, and that the scabs separated. The tongue, however, continued very painful, and still materially interfered with deglutition.

Such was his condition, when I was suddenly sent for, and found him affected with acute mania, which necessitated his removal to an asylum. This attack, however, was possibly not connected with syphilis, as his brother had been in an asylum. I lost sight of him for many months after this attack, and when next I saw him, which was some time after his removal from the asylum, I ascertained that he had been submitted to a course of mercurial treatment, by means of the fumigating bath. The effect at first appeared most beneficial, but this was of very short duration; for, as the treatment was continued, all the ulcerations reopened, and fresh rupial spots appeared.

In this state he sought my advice for the third time. The patient now presented a most pitiable aspect; his face was one large ulceration; the alæ of the nose were completely eaten away; and, from the ulceration completely encircling the mouth, articulation was most painful. Large ulcerations were likewise scattered all over his body and extremities. His appearance was so revolting, that he was obliged to wear a veil in travelling. He was again ordered iodide of potassium in large doses, and on this occasion, again, marked benefit ensued. The ulcerations completely healed, and when I last saw him he came to request me to operate on him under the following circumstances. The ulceration having healed round the mouth, the cicatrix had so contracted the opening that it would barely admit the index finger, and he was anxious to know whether any operation could be performed for his relief. I need hardly say that I declined to interfere under these conditions.

CASE 7.—*Malignant Symptoms—Sloughing Chancre—Condition Aggravated by Mercury—Severe Rupial Rash—Ulcers—Iodine—Cure.*

A gentleman, aged 48, consulted me in October, 1862, and gave the following history of his case:—He had contracted an indurated chancre some two months before, which was followed by a swelling in the groin. Under advice he left London, and set out on a walking tour in Wales. After ascending Snowdon, the bubo in the groin suppurated. He was under treatment when he consulted me, and had taken mercury; the skin over the bubo was livid, and there was distinct fluctuation in it. An opening was made by potassa fusa, and almost immediately afterwards the opening sloughed, and spread rapidly. At this time he suffered very severely from night sweats and from acute nocturnal pains in the limbs. A few spots of rupia also appeared on his face and body. The symptoms disappeared under the influence of the iodide of potassium, and there was no relapse, after he had taken the remedy some three months.

This patient consulted me again, October 14, 1867, with a slight excoriation behind the upper surface of the corona, which had appeared after connection on the 9th. In spite of all treatment, this sore continued to deepen, and became indurated. It also spread slowly until towards the end of the year, when he went to Brighton. Here rapid phagedenic action set in on the sore, and he was consequently compelled to return to town on January 1st. From this date his symptoms were so severe that he was confined to the house. Mercurial fumigations were now tried by the advice of Mr. Henry Lee, but were discontinued as the sloughing increased. Opium internally administered, and strong astringent local applications were alike tried, without good result. At this time the patient was seen by Mr. Paget and Mr. Hutchinson, and the latter gentleman suggested that he should be placed, and kept in a hip bath, at an average temperature of 98 deg. The patient remained in this bath eight days and nights consecutively, and also thirteen days, being allowed to go to bed for a few hours during the night. In spite of this, the destructive action continued, and it was then resolved to apply to the whole surface of the ulcer a concentrated solution of the pernitrate of mercury. This was used under the influence of chloroform, but on separation of the slough phagedenic action again set in. The ulcer on the penis was several times treated by the re-application of the pernitrate, and by the actual cautery, but they failed to stop altogether the phagedenic action. The great advantage derived from the bath was, that it removed at once the pain which the patient suffered from the ulcer on the penis.

During the whole of this time he was affected with night sweats, loss of appetite, and considerable fever. At the beginning of March an eruption of rupia broke out all over the scalp, on the sides of the face, on the thighs, and the most characteristic on the sole of the left foot; this last commenced as a large bulla, which rapidly increased to the size of half-a-crown. On separation of the scabs all the ulcerations exposed took on a rapid destructive action. From this time the iodide of potassium was pushed in large doses, with remarkable benefit to the general health, and with marked improvement to the rupial ulcerations. At the same time the ulceration on the penis assumed a more healthy character, but whether this improvement was due to the internal remedy or the local applications it was impossible to determine. The pernitrate of mercury was re-applied, and on April 29th he was well enough to leave town for Brighton.

Since this date the patient has gradually improved in health, and has continued the iodide in half-drachm doses up to the present time. He went abroad for some months, and was a good deal at sea, and always derived the greatest benefit from sea air. He is now in good health, but still continues the iodide of potassium.

Case 8.—A young man, 21 years of age, strong and habitually of excellent health, had twice contracted soft chancre, for which he had undergone a mercurial treatment of about a month each time. In order to assist the diagnosis, the patient had been inoculated with the pus from his own chancre, but no effect was produced, neither did constitutional symptoms ensue.

On the 15th May, 1861, eight days after intercourse, he observed a small excoriation on the prepuce; this gradually enlarged, and in twenty days formed an ulcer as large as a sixpence. He now consulted M. Cullerier, who pronounced the ulcer to be a soft chancre.

The left groin was the seat of a painful, enlarged gland. The ulcer, in spite of treatment, continued to progress, and the patient complained of headache, with sore throat and coryza. On the 27th of June, that is, about a month after infection, an eruption, which soon assumed the appearance of small-pox, broke out on the scalp and face. The eruption was preceded and accompanied by an access of fever, which set in every evening with shivering, followed by heat of skin, severe headache, and perspiration. The access continued about an hour. The chancre still extended in surface, though not in depth, and was soon as large as a five-shilling piece; appearances of gangrene were now noticed, and the sore was extremely painful. The ganglion in the groin had ceased to be painful, and was now joined by several other indurated glands, constituting a complete chain.

M. Cullerier still considered the case as not being syphilitic, because he was unable to discover any induration about the sore, for which latter he ordered the potassio-tartrate of iron, with very good effect.

Still, the cutaneous eruption became rapidly worse. The sore on the face spread quickly, and became covered by thick, conical scabs, concealing deep ulcers. On the fifteenth day after the first appearance of the eruption on the face, a similar eruption broke out simultaneously on the arms, back, and abdomen. The red, elevated papulæ became pustular very quickly, the sores being covered with greenish, thick, conical scabs.

This was his state about the beginning of July: the coryza and sore throat had not disappeared. The patient still complained of severe pain in the back of the head, preventing sleep; but the accesses of fever were now more irregular. The general condition of the patient was far from being favourable; his appetite was totally lost, he was very thin, and reduced to an extreme degree of prostration. M. Cullerier, having been called in again, now at once recognised the existence of syphilis, and was much alarmed at its severity. He prescribed a mild mercurial treatment, and sent the

patient to the country for the benefit of his health. No favourable effect was produced. The ulcers on the face extended; many of them being as large as a two-shilling piece, and some the size of a crown. The unfortunate man was a subject of horror to all who saw him, and he several times contemplated suicide.

Towards the end of July, the eruptions extended to the legs. The scabs on the facial ulcers were now nearly an inch high in some places. The patient remained in the country until the end of August, having experienced some benefit, both as to his general health and the local symptoms.

On his return to Paris, he sought the assistance of a physician connected with the hospital of St. Louis. The coryza still continued, but the septum was not perforated. The post-cervical ganglia also remained tumefied; the sore on the prepuce had been much reduced in size, but not healed. No trace of induration about it.

The patient was now ordered to take ten grains of the iodide of potassium, and to increase the dose by ten grains daily, until it was raised to four scruples. The influence of the iodide was truly surprising: at the expiration of ten days, all the scabs were detached from the ulcers, and in ten days more they were all healed, except those on the legs. As the patient persisted in walking about, the scabs in this latter situation became a source of irritation from friction, and many of the sores assumed a gangrenous character, but many others were much reduced in size. On confining the patient to his bed, the gangrenous complication disappeared. The dose of iodide was still kept up to four scruples daily; and in June, 1862, the ulcers on the legs, together with all other traces of the disease, had disappeared. The treatment was, however, continued as a matter of precaution, for a couple of months longer; and since then he has had two courses of the same remedy for about a month at a time.

Two years afterwards, this patient was seen in the enjoyment of perfect health, fat, strong, and muscular, but, unfortunately, bearing all over his body indelible scars. These were round and white, depressed, of various sizes, but some as broad as a shilling; the superficial scars being reticulated, like those after vaccination.*

The outbreak of malignant syphilis is announced by constitutional symptoms of a very severe kind. The patient complains of great prostration both of mind and body; he experiences acute pains, a sense of stiffness in the joints,

* M. Dubuc, Theses de Paris, No. 59, 1864.

increased at night; headache is also much complained of. These local symptoms are accompanied by general fever, which is usually so severe that the patient is confined to bed. The febrile symptoms are sometimes continuous, but in several cases they assume an intermittent character, and commence towards evening. They precede the outbreak of the secondary or tertiary symptoms by three or four weeks, sometimes by a few days only, and may continue, with more or less intensity, for a considerable time after the appearance of these manifestations. In these unfavourable cases, the febrile symptoms assume a low, nervous character as the disease progresses. The fever is constant, but increases towards evening, with aggravation of the headache; diarrhœa and night sweats are sometimes present. In other cases, the nervous symptoms predominate, and present a variety of forms. Thus, there has been sometimes observed numbness confined to one limb; in other cases, epileptiform convulsions; in others, again, those low nervous disorders which accompany the last stage of hectic fever. These latter cases often terminate fatally.

The duration of the premonitory stage varies, as I have said, from a few days to a few weeks. It is followed by the outbreak of late secondary or tertiary symptoms, without any intervening accident, except slight angina and inflammation of the pituitary membrane, which have been observed in a few cases.

The form which syphilis assumes in these malignant cases is generally that of a severe pustulo-crustaceous eruption; in two cases, however, observed by M. Robert, the first and only symptom was syphilitic sarcocele.

The eruptions of malignant syphilis may be distinguished into two kinds, the vesicular and the tubercular. It is unnecessary to describe them to any length, because their

general characters are the same as those of the ordinary syphilitic eruptions, from which they differ by the severity of the constitutional disorders accompanying them, and the rapid manner in which they extend over a considerable portion of the body.

In all the cases of this kind which I have seen myself, the eruption was either ecthymatous or rupial, and succeeded phagedenic chancre.

In the ecthymatous and rupial forms the elementary, vesicular stage passes so quickly into one of ulceration that it is seldom observed. The eruption is scattered irregularly over the whole body, without grouping, and in a disorderly manner; but it is usually most abundant on the face, back, and lower extremities. The ulcers, when fully established, may be distinguished into two kinds. Some are extensive in surface, but not very deep, and are covered by brownish-green scabs, which do not project much above the surface. They might be referred rather to impetigo. In the majority of cases the ulcers present the appearance of those produced by deep ecthyma or rupia, for they are covered by thick, rough scabs, presenting the well-known limpet-shell appearance. On the face and other parts where the development of the scab is not impeded mechanically, the crusts are conical, and may become very prominent. The size of the ulcers, which are surrounded by a copper areola, varies in different cases, and also according to the period of their existence. They are sometimes as large as a five-shilling piece.

The matter secreted by these ulcers is thick, yellow, and concretes readily; it emits a very fœtid odour, and the ulcers themselves are often extremely painful, so much so as to deprive the patient entirely of sleep. A change in the appearance of the scab, which becomes less prominent

and thinner, is the earliest sign that ulceration has been arrested, and that the local disease is on the decline. After cicatrization we find scars, the appearances of which will depend on the extent to which the ulcer has destroyed the tissues of the skin. The more superficial resemble those which follow vaccination; if the whole thickness of the skin has been destroyed, the scar is deep, uniform, and white. In some cases the cicatrices exactly resemble those produced by severe burns.

The duration of this affection is long. It may last for many months, and terminate fatally, through the visceral disorders brought on by the cachectic state to which the patient is reduced.

The tubercular form, although normally a much later symptom than the vesicular, may constitute the first manifestation of constitutional syphilis. M. Dubuc has seen a case of this kind at St. Louis. The patient was a young female, who was attacked, soon after infection, by a copious eruption of tubercles. The latter ulcerated quickly, giving rise to large deep sores, which required a considerable length of time before they could be healed.

In the external characters this form differs little from the ordinary tubercular eruption which I have already described. It is preceded, however, by the severe constitutional disturbance characteristic of malignant syphilis. The eruption soon breaks out, either over the whole skin at the same time or by successive attacks. There is nothing regular or constant in the grouping or distribution of the tubercles, some of which are irregularly confluent, while others are discrete. Very soon after the appearance of the tubercles they become covered by slight scabs, ulceration has now commenced, and each tubercle becomes the seat of an ulcer, the appearance and characters of which

have been described under the head "venereal ulcers." They are very painful at this stage, and give rise to, or are accompanied by enlargement of the lymphatic glands. From the tendency of this ulcer to extend in depth, the scabs seldom project above the surface, as in the rupial form, but on the contrary, are often depressed, and slightly cup-shaped.

The progress of this form differs little from that of the vesicular eruption. It is more amenable to treatment, yet can seldom be removed before many months have passed over, and it is liable to relapse. Death may ensue from exhaustion or from visceral disease.

Before terminating this brief description, I may remark that the tuberculo-ulcerative eruption, in some very few cases, has been observed to assume a gangrenous character. This, I think, is an interesting fact, as showing that the modern disease may, from time to time, present the character of its Neapolitan progenitor. The premonitory symptoms of the gangrenous form are especially severe, and the gangrenous complication sets in from one to two weeks after the appearance of the eruption. The appearance of the scab supplies the earliest indication of the mischief about to take place. The central part becomes dark, and on removing the scab, a dry, black eschar is discovered underneath. The mortification extends rapidly, yet in a very regular manner and by successive zones, around the circumference of the original sore. The latter dips likewise into the substance of the skin; the dark eschar follows it, but as the destructive process diminishes in proportion as it descends, the eschars present the appearance of an inverted rupial cone. The eschars are surrounded by a hard, copper-coloured ring, which, when pressed between the fingers, gives a sensation like that of indurated chancre. When reparation is about to take place, the eschar becomes detached from this ring, and finally comes away, leaving a round, clean-cut, but not deep

ulcer underneath. This ulcer may heal after a certain time, yet even then the eruption cannot be said to have definitively disappeared. The surface of the spot continues to throw out in abundance thin, whitish scales, which resemble those of psoriasis, and this pseudo-eruption continues until the zonular indurated ring has completely disappeared.

The progress and termination of the gangrenous form appear to be similar to those of the two other species. It is attended by the same severe general symptoms, and pursues the same chronic march, the gangrenous ulcers breaking out over all parts of the body in succession. Like the vesicular and tubercular forms, it is always attended by enlargement of the lymphatic glands, a symptom not observed in the analogous eruptions which are not of a malignant nature. The gangrenous complication does not seem to increase the danger of this affection, and render its prognosis more unfavourable than that of the other forms.

In the treatment of malignant syphilis, the most important point is to avoid the administration of mercury. This rule applies to the milder, as well as to the severe forms of the disease, which have been just described. Afflicted with this distressing and dangerous malady, patients are apt to seek the advice of one medical man after another. A change of treatment is often the consequence; yet in all cases it has been observed that the symptoms have been aggravated, and the general health rapidly impaired, by the injudicious adoption of a mercurial treatment. Under the influence of this remedy, the ulcers almost immediately spread, become deeper, and manifest a tendency to gangrene.

The iodide of potassium, in moderate doses, is the only specific remedy which can be safely employed. It should be combined with tonics; and when the absence or subsidence of febrile symptoms, &c., permit the use of wine, the latter

should be given according to the condition and previous habits of the patient.

It is also necessary to assist the action of the specific remedy by the means usually employed for sustaining the health and invigorating the constitution. It is always prudent to employ such means during the treatment of tertiary syphilis; but it is absolutely necessary to insist on them during the course of the malignant form. As soon as the fever, night sweats, and debility have been relieved, the patient should be sent to the country, where moderate exercise, free air, and absence of excitement always contribute towards his restoration to health. The diet should be nourishing, yet carefully regulated according to the condition of the digestive organs; and, when circumstances permit, a course of sulphureous waters should be taken to complete the cure.

CHAPTER XIII.

AFFECTIONS OF MUCOUS MEMBRANES.

Affections very Frequent—Kinds of Affections—Erythema Faucium—Opaline Patches—Aphthous Ulcers of Tongue and Throat—Ulcers of Tonsil, Pharynx, Lips, Tongue, Anus—Destructive Ulcers of Tertiary Period.

CERTAIN mucous membranes are affected during the course of constitutional syphilis with inflammation or ulceration. Some of these lesions occur early, others late; the early affections being usually inflammatory, while the latter are ulcerative.

The first of these affections which I shall notice is angina faucium, or the syphilitic sore-throat. We have seen several patients thus affected, and I request you to examine them, so as to become familiar with the appearance of the disease in this particular locality. Indeed, you should always make it a rule to examine the state of the fauces whenever a patient presents himself with any of the early eruptions on his skin; for the throat affection may be so slight as to escape the notice of the patient himself.

Angina faucium is of two kinds. It may be an erythematous inflammation, or it may depend on an eruption of mucous patches in the interior of the mouth and throat.

In the first case the affection very frequently coincides

with an eruption of roseola on other parts of the body. Thus, in 192 cases of erythema, M. Bassereau observed thirty-two cases of angina faucium, characterized by redness of the fauces, with pain and tumefaction of the parts. In several of the cases the angina commenced at the same time as the roseola, and was, therefore, probably a true erythematous eruption; but in all the cases, the natural history of which I have had no opportunity of following out, erythema faucium has appeared about two months after the induration of the initial ulcer. This is a slight affection, and generally passes off in a few days, if the patient has been in the enjoyment of good health. One of our patients, however, presented an exception to this rule. He had a hard chancre two months ago; the ulcer healed, and he then discontinued attendance at the hospital. When he next applied, we found an erythematous patch on the left tonsil, and this subsequently terminated in ulceration. You will also observe a superficial ulcer on one side of the tongue.

The second form of angina faucium depends on the development of mucous patches in the mouth or throat. This is a more severe and persistent affection than the erythematous variety. Having already described the mucous patch, I need not enter into particulars now. It will be enough to say of these patches that they are found on the amygdalæ especially, on the velum, palate, and back part of the tongue; sometimes on other parts of the mouth and at the commissure of the lips. When the patches are attended by a sufficient degree of inflammation and swelling to constitute sore-throat, we find their flat and slightly elevated surfaces covered with the opaque filament peculiar to them, and which resembles so much a diphtheritic false membrane. This is well seen on the amygdalæ. When accidently removed by the passage of food, we find a raw surface underneath, presenting the appearance

of a slight crosion. The mucous membrane surrounding the patch is often deeply injected or inflamed, so as to form an irregular areola. These slight changes are confined to slight cases. When the attack is more severe, the tonsils are greatly tumefied, and may block up the isthmus altogether; there is a great deal of pain in the back of the throat; deglutition is impeded; in a word, the symptoms of ordinary sore-throat may manifest themselves, but without the high symptomatic fever which attends simple angina of a severe degree. The passage of food, or even the movements of deglutition, frequently detach the secretions from the surface of the mucous papulæ, and we then observe a depressed, excoriated, and bleeding surface, which may be readily mistaken for a superficial ulceration. The latter may actually occur, but the affection generally terminates by resolution. Its course is protracted, and unless cut short by treatment, the patches may continue for several months after the subsidence of the acute symptoms.

I should not forget to mention to you that angina faucium is often accompanied by painful enlargement of the submaxilliary ganglia; but this effect appears to be rather simple than specific, and the enlarged glands, which may acquire some size, disappear as the inflammation subsides without suppurating. The same thing occurs sometimes from mucous patches, and from superficial ulcerations; as these heal, the enlargement of the glands passes away. In several cases, also, we find the opposite extremity of the alimentary canal affected at the same time by mucous patches which are developed round the orifice of the anus.

The mucous membrane of the mouth and throat is, as I have said, frequently affected during the course of syphilis. Few patients, indeed, are met with, who have not suffered, at one time or another, from inflammation or ulceration of the

membrane which lines the superior orifice of the alimentary canal, and the parts continuous with it. These affections are of various kinds, and belong to different periods of evolution; but it will be more convenient to describe them together, in the order according to which they usually occur.

They may be distinguished into three kinds, according to their periods:—the early, the secondary, and the tertiary. The early form has been just described.

Ulceration belongs to the secondary form of syphilitic sore-throat, which is chiefly distinguished from the former by its indolence and its tendency to relapse. It usually coincides with some one of the late eruptions, such as rupia, ecthyma, &c. The ulcer presents an aphthous appearance; it is superficial, surrounded by a well-marked redness, with some degree of swelling, and is of a whitish appearance. This kind of ulcer is also found on the sides of the tongue, its dorsum, about the frœnum, or at the commissure of the lips. It then looks as if the epithelium had been scraped off by some roughness of the teeth, and presents a smooth, white, shining surface, which is not elevated above the level of the surrounding tissues, as is the case with the mucous patch. This is a troublesome affection; it renders the tongue very sensitive to stimulating substances, it is not easily removed by treatment, and it may obstinately continue after the other secondary symptoms which accompanied it have passed away. It is right, however, to mention that some difference of opinion prevails, not only as to the period at which this aphthous ulcer may occur, but as to its nature. Some writers describe it amongst the early symptoms; others refer the aphthous ulcer to a much later period. Both may perhaps be right; for this form, when it occurs many months after infection, bears much resemblance to a mucous patch of a second or third relapse.

If we lay aside theory, however, and look to the practical part of the subject only, we shall find that ulcerations of the mucous membrane may occur at various periods of secondary syphilis, occupy various seats, and present many differences of aspect. They are, moreover, greatly influenced by certain constitutional peculiarities, and by the kind of treatment which may have been adopted for the general secondary affection itself.

Hunter's description of the typical venereal ulcer of the throat is well known. He describes it as "a fair loss of substance, part being dug out, as it were, from the body of the tonsil, with undermined edges; this is commonly foul, having thick matter adhering to it like a slough, which cannot be washed away."

These ulcerations are best observed on the tonsils, which is their favourite seat. When first seen in this situation, the ulcer is clean cut and slightly excavated, penetrating, more or less, into the tissue of the part, and covered by an adherent, pultaceous matter. The tonsils are swollen, and of a dull-red colour; the patient complains of pain, and of some difficulty of deglutition, or experiences pain shooting up along the Eustachian tubes. As the ulceration progresses, it deepens, and may extend in surface, but not considerably, under ordinary circumstances. This form of ulcer, especially when accompanied by inflammatory action, is also attended by swelling of the sub-maxillary glands.

Although generally seated in the tonsil, the ulcer may occupy situations concealed from view, and the young practitioner should be prepared for cases of this kind. The nature of the symptoms will lead to a knowledge of the part in which we may expect to find these concealed ulcers. Thus, in some cases, the patient chiefly complains of much pain during the act of deglutition. On examining the

throat in the usual way, nothing is discovered; but if you desire the patient to make a deep inspiration, the velum is drawn up, and the characteristic ulcer, with its foul surface and circular shape, is discovered on the back of the pharynx, and sometimes at its lower part.

In other cases the voice is nasal, the secretion from the back of the nares is troublesome, and all attempts to swallow excite severe pain. The ulcer, in such cases, must be looked for high up in the pharynx, at the angle between its upper and back parts.* Many, if not the greater part of these ulcers are, however, tertiary.

The lips and tongue, as I have already observed, may be affected during the secondary period; but we seldom observe the deep, excavated ulcer on the tongue. Secondary ulcers of the lips are usually superficial, and more or less of a circular form; the edges of a deep-red colour, the centre white and shining, from the plastic exudation which covers them. At the commissure of the lips, the ulcer looks more like a fissure than anything else.

Secondary ulceration of the tongue may present itself under several forms likewise. The ulcer is more frequently observed near the lip, or on the sides, than on the dorsum linguæ. It is seldom regular in appearance, but has a tendency to assume the character of fissure, extending along the sides of the tongue; at other times on the dorsum, and exciting considerable pain, or increasing the sensibility of the part in a very inconvenient manner. It should be observed, however, and borne in mind, that many of these ulcerations may be so modified by the prolonged action of mercury as to lose their specific character in great part, if not altogether.

* Collis, "Practical Observations on the Venereal Disease," p. 126. Dublin, 1837.

The inferior orifice of the alimentary canal may likewise be the seat of ulceration, either primary or resulting from mucous patches. In some cases, this ulceration follows the radiating folds of the anus, and presents the appearance of a deep-fissured erosion; in other cases, it is the projecting surface of the folds which is attacked. These become congested, tumefied, and form a thick, projecting border round the sore, which is of a greyish-yellow colour. The ulcer furnishes a good deal of pus, is often painful, and always keeps up a degree of irritation about the parts, which gives rise to great discomfort.

The fissured ulcer is more painful still, and is often followed by permanent contraction of the sphincter.

I have had occasion, not unfrequently, to observe another form amongst the female patients of the Lock Hospital. This has occurred in women affected with other secondary symptoms. It is a painful, superficial ulcer, seated just within the sphincter ani, and presents all the appearances of a superficial fissure of the rectum. The ulceration is distinctly marked, and not to be mistaken for that kind which we see at the commissure of the lips, when a mucous patch in that situation becomes fissured, and ulcerates. I have seen this kind of ulcer very often, and am certain that it occurs more frequently in females than in males.

The secondary ulcerations which have been now described are generally superficial, and heal without having inflicted any great mischief on the parts in which they are seated. It is not so with the tertiary form, which, being the consequence of tubercle or the gummy tumour, often gives rise to destructive ulceration of the tissues.

The precise difference between these two kinds of tumour has not yet been ascertained. One is said to belong to the tertiary period; the other to the quaternary, or visceral

period. One is supposed to affect the sub-mucous and sub-cutaneous cellular tissue chiefly; while the other is often found in the substance of the different viscera. But there are so many exceptions to these circumstances, that for the present, and speaking practically, we are forced to describe tubercular and gummy ulcers under the same head; and to prevent repetitions, I shall comprise both under the name of tubercular.

They present some differences, however, in their early stage of formation, at least when seated below the skin. When the sub-cutaneous gummy tumour is about to ulcerate, it becomes soft in the centre. The softening proceeds from within outwards. The apex of the tumour becomes adherent to the skin, which is of a dark blueish colour at the points of contact. A breach of surface takes place here. A thin, viscid, gummy pus is discharged, and ulceration ensues. The appearance of this ulcer, when first formed, is very peculiar. As softening of the body of the tumour has preceded the ulceration at its apex, the body of the ulcer is larger than its orifice, which is clean cut, round, and enclosed in a purple aureola. The matter now discharged partakes less of the gummy nature, and is yellowish and fœtid.

In the tubercular form, the inflammation and ulceration proceed from without inwards. The pus secreted is thick, of a green-yellow colour, and the ulcer itself, when seated below the skin, is covered at an early stage by a dark yellow-green scab, which may subsequently become blackened by the admixture of blood with the pus. These differences have not been observed when the ulcers occupy the sub-mucous or the deeper tissues; the seat of the lesion probably modifying some of the external characters.

The tubercular ulcers now under consideration are often produced in a very insidious manner, so much so that the

patient is unaware of their existenee until a great deal of misehief has already occurred. This depends on the slow manner in whieh the tuberele is developed, and on the slight degree of irritation whieh it exeites, until the surrounding tissues beeome the seat of inflammation. The tubereles are found in various parts of the mouth and throat, in the velum, the amygdalæ, the pharynx, the sides of the eheeks, and the tongue. In all these situations, they eommenee in the same manner and terminate in the same way—viz., destruetive uleeration—unless their progress be arrested by treatment. A small, indolent, eireumseribed swelling elevates the mueous surfaee beneath whieh it is being developed. The surgeon has seldom an opportunity of seeing the tuberele at this stage. At a later period, and when the tubercle oeeupies the baek of the mouth, the patient's attention is exeited by pain in the part, and more or less uneasiness or pain during the aet of deglutition. The mueous membrane over the tuberele is now found to be swollen and inflamed, and uleeration rapidly ensues, the uleer quiekly gaining ground in depth, and sometimes in surfaee. It is a eireular, elean-eut, and deep uleer, the bottom of whieh is lined with a grey pultaeeous matter. The soft palate is often perforated by uleers of this kind, and may be almost totally destroyed by them. On the roof of the palate, they are still more dangerous. The elose proximity of the mueous membrane to bone aeeounts for this eircumstance. When the membrane is destroyed, the exposed bone beeomes neerosed, and the osseous roof of the palate gives way at the points attaeked. In cases of this kind, and also when eonsiderable damage has been inflieted on the soft palate, deglutition is mueh impeded, and the patient distressed by the passage of fluids whieh are expelled foreibly through the nares at every attempt to swallow. Uleeration of the pharynx, of whieh I have spoken already, is, I believe,

always a result of tubercle. It may occupy the back of the pharynx, and is then seen as a round ulcer covered by a grey, adhesive matter. Higher up, the ulcer is not easily brought into view; but its seat may be suspected from the pain which shoots up along the Eustachian tube, and by the impairment of hearing which ensues.

The sub-mucous tissue of the nostrils and septum is likewise the occasional seat of tubercular ulceration. Here the disease may produce considerable deformity, unless arrested in time. One side of the nostril is frequently thus destroyed. In other cases, the cartilaginous part of the septum is the seat of the tubercle, which will often be found about a quarter of an inch from its anterior extremity; and when the septum has been eaten through, the point of the nose is depressed or becomes twisted. In this respect, the tubercular form is distinguished from the tertiary affection, during which latter the osseous support of the nose gives way, and its point is turned upwards instead of being depressed.

Tertiary affections of the tongue are superficial or deep-seated; the tubercles being sometimes developed in the sub-mucous tissue, at other times in the substance of the tongue. Superficial or sub-cutaneous tubercles are more often a late secondary than a tertiary symptom, and are frequently attended by a few spots of some relapsing cutaneous eruption scattered over the body. They are not large, but may be easily detected by the touch, and seldom ulcerate; the mucous membrane which covers them presenting for a long time the appearance of a pale, smooth, and shining point. The deep-seated tubercles are developed in the inter-muscular cellular tissue. They are sometimes single, at other times small and confluent. On careful examination of the tongue, they can be detected by pressure almost as readily as the sub-cutaneous mucous tubercle, for they are larger, and continue dormant

for a considerable time, merely producing a certain degree of derangement in the functions of the organ. These tubercles, under the influence of treatment, often disappear rapidly; and in some cases their degeneration is attended by a slight degree of the same atrophy and retraction of the tissues which we observe in other organs. If neglected or overlooked, ulceration ensues. The tubercle slowly gains the surface of the tongue, and raises up the mucous membrane, which takes an inflammatory action, accompanied by an œdematous engorgement of the tissues immediately surrounding. Ulceration now sets in at the centre of the inflamed circle, and may destroy within a few days the whole of the tubercular mass or group. The ulcer thus formed is round, deep, and perpendicular, enclosed by an inflammatory border, and seated on a peculiarly firm base, which is covered by a greyish-yellow exudation.

The local symptoms attending tubercular ulcerations of the tongue are modified, as we might expect, by their situation and size. When large, and seated on the dorsum, they occasion excessive irritation and pain; the tongue is swollen, its movements are greatly impeded, and the inflammation often extends to the back of the throat, rendering deglutition extremely painful. The scars resulting from the cicatrization of these ulcers are peculiar. They are depressed, smooth, and often present that particular shining appearance which has been well expressed under the name of "silvery."

CHAPTER XIV.

IRITIS, RETINITIS, CHOROIDITIS.

Syphilitic Iritis—Premonitory Symptoms—Course and Progress—Effects on Eye—Tubercular Iritis—Diagnosis—Retinitis—Symptoms and Course — Changes produced by—Effects—Ophthalmoscopic Appearances — Choroiditis—Appearances — Progress — Complications—Case.

We have now to consider those secondary affections which attack the eye—viz., syphilitic iritis, retinitis, and choroiditis.

The essential character of syphilitic iritis is that of adhesive inflammation; but I shall recur to this again. Let us proceed according to the order which I usually adopt, as best calculated to give a clear idea of the course and characters of each affection.

The time at which you may expect to find iritis is during the early secondary period, up to the sixth month after infection. In many cases, however, iritis sets in much earlier, between the second and third months. Mr. Carmichael considered that it most commonly occurred with the papular eruption. For my own part, I have not noticed coincidence with any particular form of secondary skin disease. In the last case which I was called to treat in private practice, the

patient had a well-marked pustular eruption of ecthyma over the whole body.

Iritis, on its first attack, generally affects both eyes, either symetrically, or at short intervals between the attacks. The affection is liable to relapse at a later period, when one eye only is commonly affected. Mr. Hutchinson believes that those attacks which occur at a later period are relapses; but many surgeons consider this late form, not as a relapse, but as a distinct kind, depending on gummy inflammation of the iris.

Iritis and deep-seated inflammations of the eye frequently occur during the course of syphilis. Mr. Hutchinson, speaking from memory, thinks that, at the Ophthalmic Hospital, one out of five patients affected with iritis, &c., labours under inherited or acquired syphilis.*

The army statistics for 1864 showed 2,562 cases of secondary syphilis, comprising 154 cases of iritis, or 1 in 16·64.†

The premonitory symptoms of syphilitic iritis are milder than those which announce an attack of ordinary inflammation in the same part. The first symptom that usually attracts the patient's notice is some intolerance of light, accompanied by increased secretion from the lachrymal glands—in a word, what the patient calls "running from the eye."

These symptoms are soon followed by acute pain in the eye-ball, and over the brow—frequently exacerbated during the night.

The iris, if examined at this early stage, is manifestly sluggish. Though intolerant of light, the iris is unable to contract under its influence.

The appearance of the iris soon changes likewise. It loses its peculiar brilliancy; and the natural colour becomes changed from the blue or grey to a yellowish hue, or from hazel to a

* Rep. p. 287. † Rep. p. 585.

reddish brown. This change of colour indicates that effusion of coagulable lymph has commenced. The free edge of the iris now becomes fixed, and soon afterwards deformed by the adventitious deposit. The circular opening of the pupil becomes oblong or irregular; but the angle of the deformed pupil does not always point upwards and inwards, as Beer and many other oculists have said it does. This irregularity of the pupillary margin may be detected at a very early stage by the use of belladonna. As the pupil dilates, the irregularity becomes manifest.

M. Sichel, the well-known German oculist, of Paris, has described a dark, or copper-coloured circle, marking the free edge of the iris, which he considers as very characteristic. Another circle, however, always well marked, is formed by injection of the small vessels of the sclerotic at its junction with the cornea.

During these changes, the pain and intolerance of light are commonly aggravated; yet I have observed very great differences in different individuals with respect to these two symptoms. In some cases, they are much more acute than in others. The same remark applies to intolerance of light, from which some patients suffer severely, while others complain little of it. I have also remarked that these differences do not depend entirely on the more or less acute character of the inflammation; for I have noticed their absence when the inflammatory action has been most acute, and *vice versâ*. According to my own observation, the differences of which I have just spoken rather depend on the structures attacked than on the intensity of the inflammation. However this may be, as this latter progresses, the deeper-seated tissues of the eye become more or less involved. Small flocculi of coagulable lymph are seen floating in the aqueous humour, which becomes turbid and opaque—in some cases, so much so

as to destroy vision entirely. The coagulable lymph on the iris becomes organized, and gives rise to adhesions between the pupil and the neighbouring parts, the deformity of the pupil thus becoming permanent.

Inflammation of the iris seldom leads to total loss of sight. Since I have been attached to the Lock Hospital, I have seen one patient only in whom vision was destroyed by this affection. She was an in-patient at the hospital in the Harrow-road, and, at the time of her admission, was suffering from constitutional syphilis and severe salivation. She had been previously the inmate of a workhouse, was of strumous constitution, and, when admitted into hospital, the iritis was already far advanced.

True abscess of the iris may occur in some cases; but this complication, I am inclined to believe, rather belongs to the gummy form of iritis, concerning which I shall now say a few words. This species was well known to Lawrence, Mackenzie, and other oculists, who have attributed it to the circumstance that the coagulable lymph assumes a tubercular form in or on the substance of the iris.

Virchow, on the other hand, is disposed to regard these apparently tubercular deposits as gummy tumours, without, however, pronouncing a positive opinion, because he was unable to verify it by examination after death. Lawrence and Mackenzie describe these tubercular masses as deposits of a distinct form: "At first they are of a reddish-brown colour, somewhat irregular on their surface, growing frequently from the edge of the pupil, assuming presently a yellowish hue, projecting from the plane of the iris, and sometimes enlarging to such a size that they press the iris backwards." Virchow, on the other hand, asks, "What other denomination than that of gummy can we give to these so-called tubercular deposits which are so rapidly formed?"

On examining their mode of development carefully, we first observe a slight tumefaction of the tissue of the iris. This nascent tumour, traversed by the vessels of the part, soon becomes prominent, and presents a special appearance. It is white and medullary, with characters which distinguish it from lymph exudations, and pointing to the conclusion that it is a cellular, not a plastic, formation.

The manner in which these tumours disappear under the influence of treatment also indicate their special nature. They contract irregularly, and seem to retire within the substance of the tissue in a way quite different from that of organized lymph, while being absorbed.

The *diagnosis* of syphilitic iritis does not, according to my experience, present any great difficulty; although it may be necessary to distinguish it from arthritic inflammation of the iris. The local and external characters are not always sufficient to establish a certain diagnosis, but we shall seldom go astray if we take into account the history of the case, and the concomitant circumstances.

Syphilitic iritis is by far the most common form. This, however, is a presumption only that the case before us is of syphilitic origin. A superficial examination in the earliest stage might lead one to think of conjunctivitis; but, on closer investigation, you will discover, not only congestion of the conjunctiva, but, underneath that membrane, a number of small, straight vessels radiating round the margin of the cornea. As the disease advances, the signs peculiar to the syphilitic form become more evident. The natural shape of the pupil is seldom changed in idiopathic or arthritic iritis. In the latter, lymph may be effused, but, according to Mr. Lawrence, it is not deposited in a distinct form, and the adhesions are generally white. The same eminent writer likewise remarks that "the tubercular depositions of lymph—the

reddish-brown discolorations of the iris on its inner circle—the nocturnal exacerbations of pain, which is felt either in a much slighter degree or not at all during the day—the angular disfiguration of the pupil—the previous occurrence of syphilis, and, in most instances, the concomitant existence of other syphilitic symptoms—clearly designate this kind of iritis, and distinguish it from other forms of the affection."

It is on this latter circumstance that I would place my chief reliance, if called on to give an opinion at a very early period of the complaint. Iritis is very frequently attended by some form of pustular eruption, or by traces which the pustules leave behind them for some time. The papular eruptions will be found in many other cases; in a word, if the patient be closely questioned and examined, the actual or previous existence of constitutional syphilis will be ascertained. The history of the gouty diathesis is different. There may be no traces of any previous attack; but a man seldom forgets when he has had a true paroxysm of gout.

Retinitis—Choroiditis.—Deep-seated inflammation of the eye, attacking the retina or choroid, occurs at a much later period than iritis. Many months or years may elapse before this form manifests itself, although in some cases it may appear about the same time as inflammation of the iris. These deep-seated affections were formerly regarded as a functional disorder of the retina; since the discovery of the ophthalmoscope, they have been clearly traced to the organic changes on which they depend. I am indebted to Mr. Soelberg Wells for the following account of the ophthalmoscopic appearance in syphilitic retinitis and choroiditis:—

Retinitis commences with venous injection of the retina and optic disc. In some cases, this injection is only partial; but in all, it diminishes as the disease progresses. The optic disc is hazy, and its outline ill-defined. Both disc and the

retina immediately surrounding it are veiled by a film of exudation, which is most evident along the course of the vessels, and is gradually lost in the healthy retina. The opacity resulting from this serous exudation is striated in the vicinity of the disc; on other parts of the retina are observed minute punctiform opacities, distributed in an irregular manner.

The inflammatory changes in syphilitic retinitis thus chiefly consist in serous infiltration of the retina and sclerosis of the connective tissue elements. Hæmorrhage into the substance of the retina is rarely met with; though in some cases extensive extravasations of blood have been observed, either in different layers of the retina or between it and the choroid.

This latter membrane very often becomes involved in the inflammation. The changes which result are confined to the periphery of the fundus, or may be seen near the retinal opacity. These changes consist in thinning and discoloration of the epithelial layer. In the portions of the choroid just mentioned, the ophthalmoscope enables us to discover groups of small grey dots, intermixed with little black spots, which are produced by aggregations of the pigment cells.

Von Graefe has described a rare form of syphilitic retinitis, characterized by its being confined to the region of the yellow spot, and by a tendency to relapse. In this form, the opacity is confined to the yellow spot, the vicinity of the optic disc being quite free. The effusion in the yellow spot may appear and disappear a great number of times, but in this form, which Graefe has denominated "Central Recurrent Retinitis," the opacity acquires a tendency to become permanent near the fovea centralis, in proportion as the disease is prolonged.

Choroiditis.—The ophthalmoscopical appearances of exudative choroiditis are described by Mr. Wells as being very striking and characteristic. In many cases, the first appear-

ances seen are small round exudations situate at the periphery of the fundus; and the disease may be overlooked at this stage. These exudations vary much in size and shape. Sometimes they are not larger than a millet-seed, at other times they attain a considerable magnitude. Their seat is either in the body or on the inner surface of the choroid. They are of a dull, light yellow or creamy tint, and the epithelium around them is either slightly thinned or of normal aspect.

When examined at a later stage, we find that these exudations have been absorbed, and the parts of the choroid on which they were situated have undergone peculiar changes. The choroid has become thinned, and the sclerotic is seen through it; the patch thus presenting a white, glistening appearance. The edges of the atrophied patch likewise exhibit changes worthy of notice. The epithelial cells at the circumference of the patch are increased in size and number, contain a quantity of pigment, and thus form an irregular black girdle round the white patch. As the disease advances, the exudations often increase in size, and, by coalescing, may form patches of very considerable magnitude.

The progress of the disease may be followed from the periphery of the fundus, where it commenced, towards the posterior pole of the eye, to which it gradually extends, until at last the whole background of the eye may be studded with the whitish spots enclosed in their black frames of choroid.

The appearances just described are, as Mr. Wells remarks, common to various kinds of choroiditis, and do not indicate their syphilitic origin with any degree of certainty.

The retina may become involved by extension of inflammation from the choroid. In exudative choroiditis, the external layer of the retina becomes more or less glued against the choroid, and destroyed; or the pigment may become infiltrated

into the retina. In other cases, the retina is compressed by the exudations, is atrophied, and, after some time, may be changed into a kind of fibrillar tissue, in which no vessels or trace of normal structure can be distinguished.

Any of these appearances may be observed during syphilitic choroiditis; but some authors think that certain appearances are more especially characteristic of the specific affection. Thus, one observer remarks that in syphilis the tissue-changes extend deeply into the stroma of the choroid, and that the small exudatory masses have no tendency to coalesce. According to Graefe, the syphilitic species most frequently appears under the form of numerous white patches, at the posterior pole of the eye, circumscribed by a pale-red zone. In some cases, Mr. Wells has seen the region of the yellow spot occupied by a large nebulous exudation of a blueish-grey colour, round which numerous small exudations and atrophied patches were scattered to a considerable distance, while the periphery of the fundus was almost free from change. The vitreous humour frequently becomes implicated during the progress of choroiditis. Mr. Wells has met with several cases in which the first symptom of affection of the eye consisted in the appearance of a few floating opacities in the vitreous humour.

In other cases, the vitreous humour is not affected until a later stage of the disease, and the opacities may be so numerous as to render the fundus quite indistinct.

I have entered into these details, because the lesions now described require to be detected at the earliest moment possible. They are often amenable to treatment; but, if neglected, they may become permanent, and the sight seriously compromised. Any derangement of the vision during syphilis should therefore attract attention, and an examination with the ophthalmoscope be immediately made.

Syphilitic inflammation of the retina is generally a chronic affection, and it is, furthermore, very subject to relapse. The principal symptoms consist in functional derangement of the eye. The power of vision is greatly impaired, and often diminishes in a very rapid manner. The lesions observed in the region of the yellow spot are more particularly attended by this rapid impairment of sight; on the other hand, as Mr. Wells has remarked, the presence or absence of the punctiform opacities in the macula lutea give rise to corresponding fluctuations in the power of vision.

The field of vision is not much impaired, or may remain free, but zonular defects are frequently detected in the vicinity of the yellow spot.

The characteristic symptom of central retinitis is the perception which the patient experiences of a dark irregular spot in the centre of the visual field. This corresponds with the opacity which Graefe has described in the fovea centralis; but it is important to observe that the functional disturbances precede the effusion. In some cases, particular portions only of the visual field are obscured. The power of sight is greatly impaired in all cases, and the patient becomes almost perfectly blind, when both eyes are attacked at the same time. The attack is generally sudden, but it passes off in a few days, to recur again and again at intervals varying from a fortnight to three months. The functions of the eye remain unimpaired during the intervals, up to a certain period. The effusion, in fact, disappears during these intervals in recent cases, but, as the disease becomes prolonged by frequent relapses, the grey central opacity becomes permanent.

The symptoms of choroiditis are in many respects similar to those of retinitis, but are more severe; indeed, the latter membrane often becomes implicated by extension of disease from the choroid. The exudation in the region of the yellow

spot gives rise to the perception of a dark central cloud, which considerably impairs the sight; but, when the exudations are confined to the periphery of the fundus, vision is not materially affected, except in the outline of the field. Another symptom frequently present is the perception of a dark cloud, or of black objects, which may be either fixed, or float before the eyes. These depend generally on floating opacities in the vitreous humour, or on injury of the retinal tissue from compression, sometimes leading to atrophy.

The following case is chiefly remarkable for its sudden termination, under circumstances which remained unexplained by the nature of the case itself, or by the symptoms which preceded death. It is worthy of remark, that the first manifestation of the constitutional disease consisted in the appearance of palmar psoriasis only a month or six weeks after infection.

CASE.—*Choroido-Retinitis—Death.*

F. L., aged 32, contracted an indurated chancre in October, 1860. In December of the same year, some spots of psoriasis appeared on the palms of the hands, followed by a similar eruption on the neck in the early part of 1861. Towards the end of January, 1861, the patient observed that distant objects appeared indistinct, as if obscured by a haze or mist. The weakness of visual power increased, all objects becoming indistinct—near ones more so than those at a distance. The patient was able to read writing without much trouble, but was unable to read the large print of a newspaper.

Mercury was immediately administered, and the sight was materially improved, so far as objects were concerned; but there was no improvement in the power of reading printed matter. Having been seized with a severe attack of boils, and considerably reduced in strength, I sent him to the country, where he remained a fortnight. He returned much improved in general health, but the state of the eyes remained unchanged. It was now thought advisable to have the patient seen by Mr. Critchett, who examined him with the ophthalmoscope, and found the lesions characteristic of choroido-retinitis. Ordered to take five grains of blue pill, with one-sixth of a grain of opium, every night.

The spots of psoriasis on the feet and hands are still apparent.

Oct. 28.—The patient complains of severe pain in the right ankle, in the shoulders, and knees. The pains are much increased as soon as he goes to bed. There is slight incontinence of urine. A few drops at first come away, without his being conscious of the discharge, after which he is able to control the action of the bladder. There is a good deal of irritation about the glans penis, and sufficient discharge to stain the linen. Ordered

Potass. Iodid. ʒss.
Potass. Bicarb. ʒiij.
Mist. Camphor. ʒvj.

Nov. 20.—The sight has much improved, but the state of the urinary secretion leads to the fear that diabetes is about to be established.

Nov. 26.—The patient had been going on favourably, when he was suddenly seized with sickness of the stomach and severe collapse, which increased rapidly, and ended fatally at 5.30 a.m.

A post-mortem examination could not be obtained.

Syphilitic affections of the retina and choroid are always attended by certain degrees of impairment of vision, which were formerly called amaurotic, and were considered as functional disorders whenever the brain and optic nerve seemed to be free from organic disease. The use of the ophthalmoscope now enables us to discover that syphilitic amaurosis and the various degrees of defective vision depend, in a great number of cases, on organic lesions of the retina and choroid. The progress of these lesions may be followed from day to day by means of the instrument, and, what is much more agreeable, the effects of a specific treatment are rendered equally visible. The intensity of the cloud before the eyes always corresponds to the locality and degree of lesion in the deep-seated parts; the ophthalmoscope shows this, and also shows us how the amaurotic symptoms disappear in proportion as the exudations are absorbed under the influence of mercury or the iodide.

We have some reason to believe that the most frequent

form of deep-seated disease of the eye in syphilitic patients consists in subretinal exudations: these latter are sometimes round, prominent, strictly limited, and probably miliary gummata, analogous to the subserous miliary tubercle. In these cases, and, generally speaking, in most of the deep syphilitic affections of the eye, rapid amendment may be obtained when the disease is discovered at an early stage, and its nature established. Too much stress cannot be laid upon this point. If the exudations have had time to become consolidated, we may obtain some improvement, but not a perfect recovery.

Although syphilitic amaurosis is a tertiary symptom, the patients affected by it are, generally speaking, not much reduced, nor do they often present other symptoms of a very severe nature, unless the brain is affected at the same time as the eye. Hence the mixed method of treatment, which consists in administering mercury in combination with the iodide of potassium, is the one commonly adopted. The doses of the iodide do not require to be carried so high as they must be in cases where the brain is attacked. Still, the general rule must be observed of increasing the doses until an impression is made on the symptoms. From two to three scruples of the iodide, with as many grains of the protoiodide of mercury during the day, will generally be found sufficient. On the other hand, when the disease makes rapid progress, and occupies certain portions of the membranes which are essential to vision, the remedies, as in cases of iritis, must be pushed rapidly to a full extent. In cases of this kind, Mr. Soelberg Wells recommends the speedy excitement of salivation by bichloride of mercury in conjunction with the iodide of potassium. Syphilitic retinitis, according to the observation of Mr. S. Wells, requires that the patient should be quickly brought under the influence

of mercury. Inunction is the method preferred. Salivation is usually excited in a few days, by rubbing in ʒss to ʒj of mercurial ointment three times daily. In those forms which occur at a late period of the constitutional affection, I should be disposed to place my chief reliance on the iodide of potassium.

CHAPTER XV.

LARYNGITIS.

Periods at which Laryngitis occurs—Case—Symptoms—Terminations—Sarcocele—Different Forms—Inflammatory—Gummy—Pathological Anatomy—Symptoms—Enlargement of Testicle—Atrophy—Fungus.

Syphilitic affections of the larynx may be divided into two classes, according to the period of time at which they present themselves. Some occur early, others late. The early affections often coincide with roseola or some other early eruption, and they comprise inflammation of the mucous membrane, the mucous patch, and superficial ulcerations. The inflammatory affection of the larynx is generally mild, and in many cases appears to arise from extension of erythematous inflammation from the back of the throat to the epiglottis and upper part of the larynx. The mucous membrane lining these parts is tumefied, and of a dull-red colour; the symptoms chiefly consist in hoarseness or slight loss of voice. Since the discovery of the laryngoscope, the existence of the mucous patch on different parts of the larynx has been clearly established. MM. Gerhardt and Roth have published an elaborate article on this subject in "Virchow's Pathological Archives," and conclude that the mucous patch of the larynx is of frequent occurrence, having discovered it in eighteen out of fifty-six cases; but a very competent observer in these matters,

Dr. Morell Mackenzie, who examined a number of my patients at the Lock Hospital, in 1863, found only two cases of laryngeal patch amongst fifty-two patients. In the patients examined by Gerhardt and Roth, the mucous patch was seated eight times on the chordæ vocales, four times in the inter-arytænoid space, twice on the folds between the arytænoid and epiglottis, and once on the anterior commissure.

The superficial ulcerations often occupy the epiglottis and cordæ vocales; they resemble excoriations rather than true ulcers, and are seldom attended by any symptoms of a troublesome nature.

It is in the tertiary and quaternary periods, however, that the symptoms and anatomical characters of syphilitic laryngitis are most plainly manifested. In some prolonged cases, the disease attacks the whole internal surface of the epiglottis, the arytænoid cartilages, the chordæ vocales, and the lower part of the larynx, giving rise to large deep ulcerations of the mucous membrane, destruction of the cartilages, necrosis of the bones, and even dangerous constriction of the larynx from cicatrization of the ulcerated tissues.

These extensive lesions, however, are found towards the termination of the disease only. Syphilitic laryngitis is usually confined at the commencement to inflammation of the mucous membrane, at one or more points of the larynx. The inflammatory patches and the sub-mucous tissue underneath them become swollen. These changes give rise to hoarseness of the voice, short, dry cough, and some difficulty of breathing. This condition may remain for some time, either stationary, or with alternations of improvement and relapse, until the disease becomes definitively established. The mucous membrane of the larynx now ulcerates at different points; the expectoration becomes purulent, and often tinged with blood; the voice hoarse or altogether lost; the expiration sibilant.

On making pressure over the larynx, pain is experienced. When the ulceration occupies the upper part of the larynx or epiglottis, spasm is produced by the ingestion of fluids, which are forcibly expelled during attempts at deglutition.

In proportion as the disease progresses, the general condition of the patient becomes aggravated. The appetite is lost, and the digestive organs are deranged. Fever sets in, with night perspirations; the patient loses his strength, and is reduced in flesh; he is harassed by a constant cough, with purulent expectoration, and gradually sinks into the same condition as that which ensues during ordinary laryngeal phthisis, dying at last from exhaustion, or cut off by a sudden attack of dyspnœa.

The disease, however, does not always terminate fatally. Surgeons have now become more familiar with the fact that syphilis is a more frequent cause of laryngitis than scrofula. The use of the laryngoscope also enables us to detect the disease at an early period, and to combat it by local as well as by general remedies. These efforts have been successful in many cases where the seat of the ulceration has not been too low down to prevent the use of local applications. Thus we now sometimes observe that the disease extends from the back of the fauces to the epiglottis, which becomes ulcerated, and is partially or totally destroyed. Virchow has related an instructive case of this kind.

Case 9.—A female, 30 years of age, died in the hospital of La Charité from dropsy, accompanied by severe dyspnœa. She had been affected for a long time with syphilitic ulceration of the throat and palate. On examining the body, these parts were found to have healed; the velum adhered to the roof of the mouth; the point of the epiglottis had also been destroyed by ulceration, but the ulcer had completely cicatrized. Below the epiglottis, the mucous membrane of the larynx was of a deep-red colour, and was free from any trace of ulceration. In this case the laryngeal affection was clearly produced by extension of the disease from the back of the pharynx.

The disease may be confined to the epiglottis, or coincide with laryngitis. In the former case, it is often an early symptom, and more amenable to treatment. The ulcers are superficial, being the consequence of simple inflammation, or succeed the mucous patches already described; their destructive tendency is limited, and they are not accompanied by severe constitutional disturbance. Tertiary ulceration of the larynx, on the other hand, is always a severe, and often a dangerous complication. The extent of ulceration varies much in different cases. When deep, the ulcer attacks the cartilages, which finally become carious or necrosed, the separated portions of bone sometimes giving rise to suffocation. The same accident may also arise from the œdema of the glottis produced by ulceration of the cordæ vocales and neighbouring parts. Constriction of the larynx by thickened cicatrix or tendinous bands may result from the cicatrization of the ulcers of which I now speak, and render tracheotomy indispensable.

Numerous cases of this kind are on record. Virchow relates one in which a destructive ulcer had extended from the left vocal chord to the cricoid cartilage. From the bottom and sides of this ulcer a dense tendinous mass extended to the thyroid cartilage, producing such a degree of contraction. that the tip of the little finger could barely be passed into it. Contraction from a similar cause may occur lower down, in the trachea, and even in the bronchial tubes. These cicatrical adhesions sometimes take place between the back of the pharynx and the remnants of the epiglottis, both of which parts had been ulcerated at the same time. The accident gives rise to a distressing form of permanent dysphagia.

Gummy tumour of the larynx appears to be of very rare occurrence. One case presented itself to M. Ricord in 1849. The symptoms were aphonia and difficulty of breathing, the

latter terminating in an attack of suffocation, which rendered tracheotomy necessary.

The treatment of syphilitic affections of the larynx requires to be conducted with discrimination and energy. When they occur at an early period, before the constitution has been impaired, mercury may be administered interiorly; the local condition must be determined by a careful use of the laryngoscope, if necessary, and the ulcers, whenever they are within reach, touched with a solution of the nitrate of silver or sulphate of copper. A camel-hair brush answers better than the sponge-probes. The mucous patches and superficial ulcers soon disappear under the constitutional treatment and simple local application.

For the treatment of ulceration of the glottis and larynx, the ioduret of potassium must be given freely. Even when the symptoms indicate considerable destruction of the parts, the effects of the remedy are sometimes most remarkable. As a local remedy, Dr. Morell Mackenzie recommends solid nitrate of silver. The nitrate is fused on to the end of aluminium wire, and thus conveniently applied.

I have mentioned how tracheotomy may be unavoidable to rescue the patient from impending suffocation. The following case illustrates this point:—

CASE 10.—*Complete Loss of Voice—Severe Cough—Muco-Purulent Expectoration—Suffocation—Tracheotomy—Death.*

Blancherry, 33 years of age, of lymphatic temperament, was received into hospital, under M. Ricord's care, on the 26th October, 1847.

Ten years ago the patient had a pustular eruption; the tonsils and palate are now ulcerated; the patient has severe cough, with muco-purulent expectoration, and the voice is completely lost. This latter symptom has existed for five months; deglutition of fluids is extremely difficult, and excites spasmodic cough.

27th.—Ordered to drink an infusion of quassia and gentian, to

garglo the throat with a solution of iodine, and to tako the iodide of potassium internally. Nourishing diet.

Nov. 4.—Very considerable improvement in the condition of tho patient; but as some irregular attacks of fever supervened, tho sulphate of quinine was administered.

The improvement, however, did not continue. The difficulty of breathing and swallowing increased; the expectoration became more purulent, and towards the end of December suffocation seemed imminent.

The accesses of suffocation were mitigated by the application of leeches to the throat, and sinapisms to the extremities, and the use of opiates; but on the 3rd January, 1848, the suffocation was so severe, that M. Ricord found it necessary to employ tracheotomy.

During the operation, the patient fell completely asphyxiated by the accumulation of blood and mucus in the wound. Without a moment's reflection, and yielding to a noble impulse, M. Ricord applied his lips to the wound, and freed it from obstruction by several times sucking out the blood and mucus. The patient was immediately restored to consciousness, and seemed to improve, yet little benefit was expected from the operation, as it was found that the trachea was obstructed by a transverse band extending above the two first rings, and merely perforated in the middle by an opening so small as barely to admit the passage of the canula.

Jan. 4.—The patient is greatly relieved, but the difficulty of breathing returned, and the patient finally sunk in a state of extreme cachexia.

On examining the larynx, its mucous membrane was found very much injected and tumefied; the cordæ vocales and arytænoid ligaments were entirely destroyed; the folds connecting the arytænoid cartilages to the epiglottis had also disappeared. The upper part of the trachea was blocked up by the transverse obstacle already noticed. Various parts of the pharynx, the velum, and the epiglottis, had also suffered considerable damage from previous ulcerations.*

Mr. Carmichael and several other surgeons recommend tracheotomy with another object. They point out the advantage which arises from keeping ulcerated parts in a state of quiescence; and they extend this principle to the treatment of syphilitic ulcers of the larynx. The practice is not employed, as a general rule, at the present day;

* Robert, l. c., p. 656.

the question may arise whether it might not be extended to a certain class of cases, where the dyspnœa is severe, although actual suffocation does not exist, and where we desire to gain time for a trial of local as well as constitutional remedies. Dr. Morell Mackenzie has, however, informed me that when tracheotomy has been employed, it becomes necessary to continue the use of the tube for an indefinite period. This arises from the circumstance that the trachea becomes permanently thickened and contracted just above the point at which the tube is inserted. The patient can no longer breathe freely without it.

Syphilitic Testicle.—The testicle may be the seat of two affections, which differ from one another both in kind and as to the period at which they are developed. One is a simple inflammatory disease, occurring late in the secondary period; the other form is a tertiary, or even a still later symptom, depending on a special lesion, which I shall presently describe. In the inflammatory form, both testicles are generally attacked, either at the same time or one after the other. The inflammation sometimes commences in the fibrous envelope of the testicle along its prolongations, and thence extends to the deeper parts, or it may commence in the tissue of the organ. The epididymis generally remains free, and the inguinal glands are not tumefied. These two characters distinguish the syphilitic disease of the testicle from cancer and true tubercle.

The inflammatory form of syphilitic sarcocele commences with inflammation either of the tunica albuginea on the free portion of the testicle or of the intersticial cellular tissue of the organ. This inflammation is propagated in the direction of the prolongations which the tunica albuginea sends into the body of the organ. It involves the cellular tissue which envelopes and separates the semini-

ferous canals, adeposit of plastic material takes place, and the connective tissue, during the early stage, presents the appearance of a soft, red mass, containing a quantity of nuclei. This mass gradually becomes thick and hard, is of a whitish colour, and finally becomes almost tendinous. It separates and presses on the seminiferous canals, which in their turn become affected. They are contorted, thickened, and at last become confounded with the dense, fibrous tissue which surrounds them. Should this change continue for any length of time, the canals become completely atrophied, and the portion of the testicle affected presents the appearance of a tendinous, homogenous cone. The extent of the inflammation will give a somewhat different aspect to different cases. Sometimes the disease is confined to a few of the conical sections contained between the prolongations of the albuginea. In such cases, the induration of albuginea is partial, and the testicle becomes atrophied in the direction of the affected segments. The retraction of condensed tissue gives rise to a depression of the adherent albuginea somewhat resembling a false cicatrix. On the other hand, when the disease has been more extensive, the whole body of the testicle diminishes in volume, and its organic structure appears at last to be totally destroyed. This unfavourable result is almost certain to ensue, unless prompt and efficient treatment be employed.

In the second form of syphilitic testicle we find the specific lesion. This is the true gummy tumour, mistaken by many surgeons for scrofulous tubercle, which it resembles much, at least in external appearances. In the testicle the tumours form round, dry, hard, and knotty masses, varying in size from a hemp-seed to that of a cherry. They are sometimes isolated, sometimes united together; they are found in the substance of the testicle, or adherent to

the tunica albuginea, which presents the same appearance of low inflammatory action as those already described. In recent cases, the gummy deposit is surrounded by an injected areola, the vessels of which are visible to the naked eye, and which is gradually lost in the surrounding indurated tissue; but in more advanced cases this areola has disappeared.

The result of microscopic examination shows that the gummy tumours are enclosed in a kind of capsule, formed by the cellular tissue. Within this we find a belt of yellow granulations, closely ranged together, and in the centre the true gummy substance formed by a collection of small, round or fusiform cells, which have undergone the fatty degeneration, and are bound together by dense fibrous tissue. Finally, in the last stage of their development, the fibrous element seems to have displaced the fatty; for the gummy tumour then forms a mass of hard tissue, like fibro-cartilage, with fusiform cells, separated by a finely-striated amorphous substance.

Although terms indicating the presence of inflammation have been employed by authors to express the different kinds of syphilitic sarcocele, the signs of inflammatory action are either few or altogether absent. In the great majority of cases, the inflammation is so slight that the patient makes no complaint of actual pain in the part, and the testicle is indolent even when we exercise pressure on it. This absence of pain is one of the most constant and well-marked signs of the disease, so much so as to render it diagnostic. In proportion as the disease advances, the normal sensibility of the organ diminishes, and is finally completely lost, the gland becoming quite insensible to ordinary pressure. The patient may complain of uneasiness and a sense of dragging in the parts, but these symptoms depend rather on the weight of the organ

and the uneasiness produced during locomotion. In some few cases, however, the patient experiences more than ordinary uneasiness about the parts, with dull pain, increased at night, in the region of the loins. On examining the testicle at an early stage of the disease, the different forms which it assumes may sometimes be distinguished. Thus, the surface of the tunica albuginea may be roughened by granular deposits; or the zonular indurations in different parts of the testicle may be discovered on making firm pressure; or a gummy tumour may be detected in the body of the organ. These changes, however, soon become indistinct, and when the patient is first seen, we can generally detect nothing more than an indolent enlargement of the testicle, making slow but certain progress, and giving rise after some time to a hard, uniform tumour of a pear-shaped form. The weight and volume of the testicle are now manifestly increased, the organ sometimes attaining twice its natural size. During this progress, the epididymis generally remains free; the scrotum is not attached to the tumour; but a passive effusion of serum into the cavity of the tunica vaginalis may sometimes take place at an early period of the disease.

The enlargement of the testicle, whether produced by plastic or gummy deposit, is not permanent. Partly from pressure caused by the unyielding albuginea, but chiefly from retraction of the adventitious fibrous tissue, the organ begins to diminish in size, and to waste away, as the patients express it. This atrophy may proceed to such a degree, that little or nothing of the glandular tissue remains. Like the lesions on which it depends, the atrophy may be general, or confined to certain portions of the organ.

One of the most interesting points—to the patient at least—connected with syphilitic sarcocele, is the influence which the disease exercises on the functions of the testicle. The

compression and atrophy of the seminiferous canals must necessarily impede the due secretion of the seminal fluid. This latter is diminished in quantity, and deteriorated in quality. On examining the semen under the microscope, it is found to consist chiefly of prostatic fluid, containing a few debilitated spermatozoa, and, in some cases, nothing but mere globules. The effects of such a condition on sexual desires and the power of procreation, it is unnecessary to describe. Fortunately, however, syphilitic sarcocele is in most cases confined to one testicle; and in some the affection may be so slight as not to interfere with the functions of the organ. An example of the latter kind came under my observation some time ago. A gentleman had contracted an indurated chancre about ten years previously to the attack in his testicle. The chancre was followed by an eruption of lichen over the greater part of the body. The patient remained apparently well for ten years; when he consulted me, I found an eruption of psoriasis on the back and chest, and also discovered a single gummy tumour in the substance of the left testicle. The secreting function of the organ, according to the patient's account, was not impaired.

The tumefaction of the testicle is generally greater in this form than in the preceding, and it is also more active, for the gummy tumour may terminate in ulceration. This may be followed by syphilitic fungus of the testicle—a protrusion of the tissue through the ulcerated opening. The appearance of this fungus is very peculiar. It looks like a mushroom granulation, connected by a stem with the body of the organ. The fungus is composed of glandular tissue, infiltrated with the gummy deposit.

If left to itself, the duration of syphilitic sarcocele appears to be unlimited; if taken early, and properly treated, it is amenable to remedies, and disappears without any unfavour-

able consequences. The gradual wasting away of the testicle has often been attributed to the action of the iodide of potassium; but the error of this opinion has been abundantly proved by classical experience and pathological anatomy.

Diagnosis.—Syphilitic sarcocele, being a very late symptom, is often accompanied by secondary or tertiary affections, which will throw light on its nature. There are generally pustular eruptions, psoriasis, ulceration of the mucous membranes, and various diseases of the fibro-osseous system. In some cases the sarcocele exists alone; but on questioning the patient, we find that he has suffered more or less recently under some other form of syphilis.

Syphilitic sarcocele requires to be distinguished from tubercular and cancerous diseases of the testicle In certain cases, and at an early stage, it may resemble simple chronic inflammation of the gland; but this latter affection is extremely rare; and even when the sensible characters of the two affections are similar, the history of the case will ordinarily suffice to clear up doubt.

Tubercular disease of the testicle presents several characters which distinguish it from the syphilitic form. The general history of the case points to scrofula, not to syphilis; while the progress and local characters indicate a syphilitic origin. Thus, the syphilitic tumour is extremely indolent, and the chord is not implicated in the disease; the whole of the testicle is indurated and enlarged, or if partially enlarged, the induration affects a peculiar form; the surface of the organ does not present the hard, knobby induration of a tubercular testicle, with adherences to the tunica vaginalis and scrotum; the cellular tissue surrounding the gummy deposits has little tendency to take on suppurative inflammation; and hence abscess of the body of the testicle is very rare.

As for cancer of the testicle, which is generally of the encephaloid form, the disease is confined to one of the organs, and always involves the chord. This tendency, indeed, is manifested by what occurs after operation. When the testicle has been removed, the disease reappears in the chord of the affected organ; but when a relapse of syphilitic sarcocele occurs, the affection attacks the other organ. The severe, lancinating pains, the more rapid progress of the disease, the prominences on the surface of the testicle, the speedy softening, followed by ulceration, are characters which indicate the malignant nature of sarcocele.

CHAPTER XVI.

AFFECTIONS OF BONES.

Affections of Bones—Periostitis—Osteitis—Caries—Necrosis—Dry Caries—The Syphilitic Sequestrum.

Bones.—The osseous framework of the body is one of the latest order of parts attacked by syphilis. The anti-mercurialists attribute affections of the bones occurring during syphilis to the action of the remedy which is employed for its cure. There can, however, be no doubt that such affections exist in cases where no mercury has been employed. The use, or I should say the abuse, of the specific may predispose to them. Other predisposing causes are general debility and the existence of any diathesis, such as scrofula or rheumatism, during which the fibrous and osseous systems are subject to attack.

It is worthy of remark, that all bones are not equally subject to be attacked by syphilis. Writers unite in observing that the superficial bones are more liable to disease than the deep-seated. The law of Hunter is thus found to exercise its influence during the later periods, for it is the superficial parts of the bones nearest the integument which are most frequently attacked. The order of frequency is as follows—bones of face, cranium, tibia, clavicle, ulna.

Syphilitic diseases of the bones may be divided into two classes, the inflammatory and the non-inflammatory. Under the inflammatory I would comprehend acute or chronic periostitis, acute osteitis, and their effects, caries or necrosis. Under the non-inflammatory we may include enlargement of the osseous tissue, as exostosis, hyperostosis, and gummy affections of the bone.

I must, however, warn you that when you consult standard works, you will find a great diversity of opinion on the point whether many of these affections are inflammatory or not, and also as to the exact tissue in which the lesions commence. Thus, many surgeons apply the term node to an affection of the periosteum, while others describe the true node as a circumscribed hypertrophy of the bone itself. Periostitis, or inflammation of the periosteum connected with syphilis, is a late secondary, or a tertiary symptom. The superficial bones, such as the tibia, clavicle, ulna, &c., are those most liable to be attacked. The symptoms of this affection will present some differences, according to the severity of the attack. Sometimes the latter is pretty sharp. The patient generally experiences pain over the part affected, and this pain is increased at night. The part is tender, and extremely painful on pressure. A circumscribed tumour soon ensues; but the swelling is rather diffused, and gradually disappears amongst the neighbouring tissues.

In the more severe cases, the signs of inflammation are evident, and suppuration may set in. In the majority of cases, however, the disease is slow in progress, and indolent, at least at first.

The tumefaction gradually increases, and becomes more solid. It is always attended by nocturnal pains, which are sometimes extremely intense, so much so that the patient is unable to remain in bed. This form, unless properly

treated, commonly terminates in the deposit of a firm plastic material underneath the fibrous membrane, the deposit finally becoming cartilaginous, or bony.

Osteitis.—The inflammation of the periosteum may be propagated to the underlying bone, and give rise to caries or necrosis. These serious effects are not, however, a necessary consequence of inflammation of the fibrous envelope. In many cases—and it is of these that I now speak—the inflammation of that portion of the bone which lies beneath the diseased periosteum is followed by circumscribed exostosis. It is to this species that many surgeons confine the name of node. In other cases, the morbid action is said to commence in the bony tissue itself, and to be confined to it. Opinions differ on this matter. M. Ricord, and with him Virchow, hold that this form of exostosis is not an enlargement of the osseous tissue, but is produced by deposit from the periosteum. My own observations have led me to adopt the same opinion. There is another, and a curious form of extensive exostosis, specimens of which you may see in all our museums; but there is little reason for attributing a syphilitic origin to them.

Caries and Necrosis are the effects of inflammation of the periosteal or osseous tissues. By osseous tissue I mean, of course, the organized tissue in which the osseous matter is contained. But syphilitic caries and necrosis are often likewise produced by those perforating ulcers which I have already described. This severe form is chiefly met with in the bones of the face, where the palate, nose, and the ascending branch of the superior maxillary may be so seriously damaged as to give rise to most unsightly deformities. Of all these lesions, however, the most extensive and severe is caries of the skull. The whole osseous roof of the brain has been worm-eaten through and through by syphilitic caries, and the wonder is,

how any patient can live under such extensive disease of a part so closely connected with the brain. Some essential difference must exist between syphilitic caries or necrosis and the same lesions in persons who are not affected with that disease. This opinion is not shared by many of our standard writers, who usually dismiss syphilitic caries and necrosis with the summary remark that they resemble in their progress and symptoms the ordinary forms of these affections. I am, however, disposed to adopt the conclusion of Virchow, who takes a different view of this interesting question; and as the opinions of the Berlin professor are founded on the most careful researches, I shall conclude this part of our subject by laying a brief account of them before you.

Virchow distinguishes, pathologically, the lesions of bones into two groups:—

1st. The inflammatory, corresponding to the analogous ordinary inflammation of bone—viz., induration, hypertrophy, exostosis, periostitis, and *one* form of caries.

2nd. The specific affections, which include gummy tumours of the periosteum and of the medullary and osseous tissues, dry caries, and necrosis. These lesions are peculiar to syphilis, and we find nothing analogous to them in the ordinary diseases of bones. The forms under which syphilitic caries and necrosis present themselves are several:

1st. In many cases they follow perforating or spreading ulceration of the soft parts. Nearly all the cases of destruction of the nasal bones and septum, of the roof of the palate and thyroid cartilage, depend on this cause. The enveloping fibrous membrane being destroyed, the bones are exposed, and finally become necrosed or carious.

2nd. When periostitis terminates in suppuration, the underlying bone may be necrosed superficially or attacked by caries. This occurs in some few cases on the tibia.

3rd. Internal caries or necrosis resulting from inflammation of the medullary canals. Ricord has described a case evidently of this kind;* the yellow, hard, lardaceous mass, exactly corresponding with the gummy tumours of other organs. M. Lebert recognised the identity of the two lesions in a case submitted to him by Dufour. Dittrich, while describing a case of extensive caries of the skull, mentions how the internal tissue of the bone was infiltrated with a dull-white lardaceous matter. Virchow does not conclude from these cases that the extensive necrosis found in the bones of the cranium always depends on osteo-myelitis of a gummy nature, but he is much inclined to think so.

At the commencement of the disease, symptoms of periosteal irritation are not well marked, or are absent altogether. The necrosis advances from within outwards. A large piece of worm-eaten necrosed bone is separated from the living bone by a dentated line of demarcation. The edges of the living bone throw out layers of new osseous matter, which project over the necrosed mass. Analogous lesions occur here and there; and when they unite, we discover after death those vast disorders by which nearly the whole roof of the skull has been destroyed.

4th. The fourth form constitutes *dry* caries. Here the lesion progresses from without inwards; that is to say, it begins either on the external or the internal surfaces of the cranium, and extends towards the centre of the bone.

The frontal and parietal bones are those generally attacked. The disease is not attended by suppuration, and hence the term *dry* is applied to it.

The essential lesion, on which this special form of caries appears to depend, is the development of gummy matter, accompanied by osteo-myelitis. A limited portion of the

* Iconage: 28 et 39, bis.

osseous tissue becomes rarified in texture by enlargement of the medullary canals. The cortical substance of the bone then gives way, and we perceive a small, stellated depression, which gradually gets deeper until it reaches the spongy part of the diploe. The depression is more or less filled by a small cone of adventitious matter, which examination with the microscope has shown to present the same texture and the same mode of development as the true gummy tumour. But, while the destructive process is going on in the conical depression, a reparative process takes place round the circumference. A thin, soft, vascular pellicle is formed round the external border of the bone. It ossifies rapidly, and becomes confounded at last with the healthy part of the bone, which then appears to be hypertrophied at these points. Finally, when the gummy matter is absorbed, the point which it occupied is depressed, and the osseous tissue atrophied; a peculiar cicatrix, in fact, is formed.

Syphilitic necrosis is more particularly characterized by the worm-eaten appearance of the sequestrum. You know that the sequestrum of ordinary necrosis, when the latter affects the superficial portion of a bone, presents a smooth, polished, and compact surface, differing little from that of the healthy part of the bone. The syphilitic sequestrum, on the contrary, is porous, and its surface is perforated by a number of holes, which become more or less confluent in the interior of the tissue. This peculiar condition of the sequestrum probably depends on the manner in which the small conical deposits of gummy matter are developed. These deposits, being unstable, are absorbed. Reparation then sets in, and we find the osseous cicatrix peculiar to syphilis. This cicatrix is characterized by a deficiency of reparation in the centre, and by an excess of reparation at the circumference. When the whole substance has been completely perforated, no attempt

seems to be made to replace the loss of osseous tissue. The cicatrices of perforating gummy ulcers in soft parts present something analogous; for they are retracted, depressed, and white, like those left by severe burns. On the other hand, when the whole thickness of the bone has not been destroyed, we find an imperfect attempt made to repair the loss of substance. A thin layer of osseous matter may be laid down at the bottom of the depression, and join the circumference where the reparative action is in excess. Here the reproductive process is very active. The medullary cavities are filled with osseous matter, and the edges of the cicatrix become hard, solid, and at last eburnated.

These anatomical details are not without interest in a practical point of view. They will assist you in determining the true nature of the disease after death, and, by connecting lesions with their symptoms, will lay the foundation for a correct diagnosis in future cases. Again, the unstable nature of the peculiar substance which gives rise to syphilitic caries or necrosis in so many cases, entitles us to hope that they are not altogether refractory to treatment. Clinical experience proves this to be the case; for the ioduret of potassium, aided in some special cases by mercury, enables us to control or even to cure several forms of osseous disease which were at one time regarded as beyond the reach of remedies.

CHAPTER XVII.

MERCURY OR NO MERCURY.

Arguments examined—Mercury produces all the Tertiary Symptoms, either directly or indirectly—Answer to this Argument—Use and Abuse not the same—Differences between Mercurial and Syphilitic Poisons—The Poisonous Effects of Mercury now rarely seen — Minor Objections examined — Its Inefficacy in certain Cases—No Absolute Specific yet known.

Before entering on any questions connected with the treatment of syphilis, we have to ask, Should mercury be excluded altogether, as a curative agent, or retained as a remedy under those restrictions which experience has shown to be necessary? This apparently simple question requires to be discussed in a calm and impartial manner; for there is, perhaps, no other point in therapeutics which has excited so much passion, or been treated with greater neglect of the rules of logic.

Let us hear, in the first instance, the arguments of those who maintain that mercury should be totally excluded from the treatment of syphilis, on account of its deleterious effects on the health and constitution of the patient. The more decided opponents of mercury insist that the so-called tertiary symptoms of syphilis, nodes, deep ulcers, affections of the bones, &c., solely depend on the action of mercury, and not on that of the syphilitic poison.

If this theory be correct, the remedy should be rejected absolutely, and without hesitation.

Several other opponents do not go so far, at least in doctrine. They assert that tertiary symptoms supervene in consequence of the manner in which the constitution has been undermined by the mercurial poison. The tertiary affections are syphilitic, but they would not have appeared without the intervention of mercury. Practically speaking, this second theory is equivalent to the first, and would equally lead to the rejection of mercury.

The doctrines just alluded to prevailed extensively many years ago; and the manner in which mercury was abused at that time gave to them much appearance of truth. At the present day, only one surgeon of eminence in the United Kingdom still maintains the first of these doctrines.

In opposition to those who absolutely reject mercury on the grounds above stated, the following arguments have been adduced.

The anti-mercurialists reason illogically. Tertiary symptoms, they say, follow the employment of mercury; therefore they are produced by it. This is the *post hoc, propter hoc* reasoning. The use of a remedy is to be rejected on account of its abuse. The anti-mercurialists confound two distinct morbid states when they affirm that the remote effects of the mercurial and syphilitic poisons are the same.

It is admitted that the abuse of mercury, employed as it was many years ago, gave rise to disease of the osseous and mucous tissues similar in some respects to those resulting from syphilis. But were these lesions identical? Is the mercurial disease the same pathological entity as tertiary syphilis?

We know, and it has been proved by a large number of cases, that syphilis can produce these tertiary symptoms,

because they have occurred in persons who never took a grain of mercury. Have the same kinds of lesions—the same in their order of development, in their external appearances and pathological characters—been produced by mercury?

Mercury may produce caries of the jaw-bone in a few weeks after infection. Is this early lesion, evidently resulting from mercurial inflammation of the soft parts, to be confounded with the caries of syphilis? Can mercury produce the gummy deposit in the bones, or dry caries of the cranium? Did any surgeon ever see syphilitic testicle produced by mercury? Did any pathologist of repute ever discover, as the results of mercurial poisoning, the peculiar appearances (the amyloid change excepted) which have been found in the liver, kidneys, and other deep-seated organs of syphilitic patients? Finally, will any physician who compares the course and symptoms of the mercurial disease with syphilitic cachexia pronounce them to be the same? The natural history of the two poisons, as derived from their effects, is essentially distinct. Though somewhat similar, they are not the same.

The results of treatment may also be invoked against the theory of the anti-mercurialists. Large numbers of patients who have never taken mercury daily present themselves for hospital relief in various countries. They are found suffering from nodes, diseases of the bones, and other tertiary affections. Such patients have been treated by mercury, and been cured of the very lesions which the remedy is said to have produced.

In support of the anti-mercurial doctrine, personal experience is appealed to, and likewise the effects produced by mercury on the workmen employed in quicksilver mines.

These effects are said to be the same as the tertiary

lesions of constitutional syphilis; they have been observed at the mines of Istria and Almaden.

To this latter assertion—which, if true, would be decisive—the mercurialists answer in the following manner. The affections alluded to are not much more frequent than one might expect to find amongst a given number of workmen under analogous circumstances.

Dr. Hermann, one of the most decided anti-mercurialists of the German school, visited the mines of Istria for the purpose of collecting evidence on this point, and concluded that a whole series of constitutional affections, hitherto attributed to syphilis, was the result of mercurial poisoning. Of 516 workmen employed, 122 presented affections which were considered mercurial. On analyzing the cases, however, it is found that only four men are described as suffering from affections of the bones—viz., one with periostitis and necrosis, one with disease of the vertebræ, and two with caries. Five other workmen complained of pains in the bones.

It is to be remarked, that in the two cases of caries the disease occupied the joints, and that two such cases among 516 workmen does not add much weight to the supposition that they were derived from mercury, rather than from syphilis or from scrofula. M. Mitscherlich likewise inquired into the condition of the Istrian workmen, but found that they were not particularly subject to nodes, caries, or gummy tumours.

The official reports of the two medical men attached to Almaden silver mines confirm the deductions drawn from the investigations made at Istria.

The mercurialists further allege that their opponents not only confound two distinct affections, but likewise confound the poisonous effects of an agent with its remedial effects.

If this be done, many of our most valuable remedies must disappear from the Materia Medica. Mercury, when abused, is a poison which produces most severe, and even fatal consequences. When administered in a proper manner, it is one of our most valuable remedies. The same remark applies to opium, arsenic, antimony, chloroform, &c. The opium-eater is a miserable specimen of humanity, yet no medical practitioner deprives himself on that account of the valuable services rendered by opium.

Our army and navy surgeons testify that they have not witnessed the deleterious effects of mercury described in certain works, and attributed to the remedy by certain of its opponents.* On the other hand, the French military surgeons have observed that tertiary symptoms are very frequent amongst the Arabs of Algiers, although they are entirely unacquainted with the use of mercury.

The opponents of mercury assert that nodes, caries, and other tertiary symptoms, were not observed, and did not exist, at the earlier periods of syphilis, before the use of mercury was known. To which it may be replied, that the use of mercury is coeval with the disease. The historical date of the latter is 1495; mercury was employed as a remedy in 1496.

We have now to consider the second aspect under which the question of the use of mercury presents itself. Every-day experience, and that on the largest scale, proves that syphilis may be benefited, and apparently cured by mercury. It has also been incontestably shown that the disease can be alleviated, and apparently cured without mercury. The question then practically resolves itself into the inquiry, Which is the better remedy for syphilis? Mercury was during many years thought absolutely necessary for the

* Parliamentary Report, pp. 27-74.

cure of syphilis. Hunter, Abernethy, and many of their successors, taught that all truly venereal affections invariably got worse unless treated by remedies. As mercury was found to be the most efficacious, it was universally employed, and diseases were classed according to the influence which the remedy exercised on them. If cured by mercury, they were venereal; if not cured by it, they were non-venereal.

The first blow given to this exclusive doctrine was inflicted by our army surgeons during the war in Portugal. The question was afterwards tested in a practical manner by Mr. Carmichael, Mr. Rose, and many other surgeons; and it is now confessed by all unprejudiced men that syphilis admits of being cured without the use of mercury. This would naturally lead to the question which method of treatment is the better; but our space may be more profitably employed than by an examination of this "vexed question." My own experience, confirmed by that of others in whose judgment and accuracy of observation the highest confidence may be placed, teaches me that mercury cures the earlier manifestations of syphilis in a more sure and rapid manner than any other remedy or combination of remedies; and I furthermore perceive that, although banished at intervals from the treatment of syphilis, it always resumes its place as the mainstay of practitioners.

In addition to the more serious objections against mercury, some of apparently less weight are constantly brought forward, and furnish matter for discussion. Mercury, it is said, is a powerful alterant; and although it may not actually produce tertiary symptoms, yet it so modifies the condition of various parts, that they are readily affected by the constitutional poison. And again, mercury is an inefficient remedy, because it does not radically cure the disease.

To the first of these arguments, it may be replied that

mercury, when improperly administered, is a poison, and that no practitioner of the present day advocates the propriety of adding one poison to another. Mercury has been employed for various other diseases besides syphilis, and often in a manner to produce copious salivation; yet the remote affections spoken of have not been observed to occur. When long continued, and administered to subjects otherwise cachectic, it may and does produce injurious effects; but here the objection would apply to the question of indications. The remedy was contra-indicated in the case spoken of, and was, therefore, improperly employed. It is conceded, however, that great advantage has arisen from attention being directed to the bad effects of long-continued or repeated courses of mercury in some cases of syphilis. Mercury is not a radical cure for syphilis. It does not extinguish the disease. This defect is also conceded; and the advocates of mercury are ready to abandon that medicine whenever a safe and radical remedy for the complaint shall have been discovered. But such a discovery has not yet been made.

Iodine is open to the same objection. It does not extinguish the tertiary symptoms. We may ask, then, Are we to reject a remedy because we cannot effect everything with it—because it is not an absolute specific? Besides, if we consider the natural history of syphilitic affections, we shall have reason to think that the infection does not act in a constant and uniform manner, or that the dyscrasy is permanent. The outbreaks, on the contrary, are intermittent, and so is the treatment.

CHAPTER XVIII.

TREATMENT OF SYPHILIS.

Principles of Treatment — Persistent Effects of Syphilitic Poison— Theories—Mode of Action of Mercury—Manner of employing the Remedy—Rules for its Administration—Preparations employed—Inunction—Fumigation—Ricord's Rules for Treatment— Methods adopted by the Author—Zittmann's Treatment—Local Effects of Mercury—Local Treatment of Symptoms—Iritis— Sarcocele — Bones — Tertiary Period — Iodide of Potassium — Hygiene—Sulphur Baths.

We have now to consider the practical part of our subject, and to establish the principles on which the treatment of constitutional syphilis should be conducted. Presuming we are agreed on the point that mercury should be employed, various questions immediately present themselves. How does mercury act? In what manner should this remedy be employed? Should we administer it at once, or defer its use until secondary symptoms have appeared? Should mercury be given as a palliative only, or as a remedy capable of extinguishing the disease? What is the best form in which mercury may be generally employed?

Much difference of opinion prevails amongst the highest authorities on all these points; and this leads me to speak of a doctrine which I have not yet noticed. We have seen how syphilis enters the system, but what sustains the action of the poison for many years, perhaps for life? What gives rise to

the evolution of a series of symptoms often appearing at considerable intervals, and deceiving both patient and practitioner with the false hope that the disease had entirely disappeared?

The manner of employing mercury is influenced by the theories which have been adopted to explain the facts now alluded to. Our own great authority, John Hunter, held that as soon as the poison was introduced into the system, it gave rise to a *disposition* in various parts of the body to be attacked by certain affections. When the disposition became changed into *action*, secondary or tertiary symptoms were produced. The disposition of Hunter resembles what we now call a diathesis. Hunter thought that the change from disposition to action might be suspended by mercury, and that the remedy might prevent the disposition from being formed at all. He accounted for the circumstance of the action becoming manifested in certain parts, and not in others, by their different susceptibilities, and by some accessory influences, such as cold, &c.

The different susceptibilities of parts for the disease seems to be a mere turning of the difficulty, because Hunter does not attempt to explain in what this susceptibility consists.

Hunter's opinion seems to be, that the disease can be cured in "the order of parts" in which it manifests itself, and that it will not return again in these parts, but that it may subsequently appear in any other order of parts which has not yet been attacked. In other words, mercury suspends the action of the disease, but does not extinguish it. Yet, as Mr. Samuel Cooper has justly remarked, "there is a striking inconsistency between Hunter's theory and his practice, for he prescribed mercury during a certain time after all existing palpable symptoms had been cured."

On the other hand, many eminent men, whose opinions are

entitled to respect, while admitting that the secondary symptoms form a part of syphilis, maintain that the tertiary manifestations are not syphilitic, but depend on mercury, or on a cachectic state of the constitution. Mr. Syme regards "all the various effects of what is called syphilis, at least with few exceptions, as due to the influence of mercury."* Mr. Hutchinson considers the tertiary symptoms, not as true syphilis, but sequelæ due to impairment of nutrition of the tissues by the prolonged circulation in them of blood contaminated by the syphilitic poison.

In what manner does mercury act? Here we find some difference of opinion, though not very great. The theory of mercury being a specific appears to be abandoned. Mr. Paget regards it as almost specific, in this sense, "that it will shorten the duration of the disease, and, if the patient can bear it, will prevent the occurrence of secondary affections."†

Many surgeons consider that mercury acts chiefly as an eliminant, assisting nature to eliminate the poison through the secretory organs.‡

The majority of surgeons content themselves with the results of experience, and form no theory as to the manner in which mercury acts. They take a practical view of the question, look to the effects of the remedy on the symptoms of the disease, and find that the latter are favourably modified, or gradually disappear. The duration of the complaint is sensibly abridged according to some, while others think that the chief effect of mercury is to delay the appearance of the constitutional symptoms.§ The general opinion, however, seems to be, that no remedy as yet discovered has the power of always eradicating the disease. The symptoms may be rendered milder, they may be delayed, the natural

* Rep. p. 223. † Rep. p. 383.
‡ Rep. pp. 37, 141, 234, 304. § Rep. pp. 185, 214, 336, 396, 485.

evolution of the complaint may be disturbed, but the theory of eradicating the poison is rejected.

Finally, Mr. Hutchinson suggests a doctrine which seems more in harmony with the results of clinical observation than any other. He considers "that mercury checks the inflammatory element, and promotes the absorption of syphilitic lymph in the primary and early secondary affections."*

Now, the observation of disease teaches us that, when even a single element in a morbid process can be eliminated, the process is, as it were, broken up—at all events, is disturbed—and may then yield more readily to the curative effects of nature. Iritis is an affection in which this can be clearly followed; and there we see that, as soon as mercury has eliminated the inflammatory element of the syphilitic lesion, the disease yields in a rapid manner. I may add, that I had also come to a similar conclusion myself, from observing the effects of the iodide of potassium on the gummy element of tertiary syphilis.

Should mercury be administered immediately—that is, as soon as the nature of the initial sore has been discovered, or should we postpone its use until secondary manifestations have appeared? On this question, likewise, opinions are divided. Many surgeons do not give mercury for the primary ulcer;† some, because they think that the secondary symptoms are more tractable, when mercury has not been employed;‡ many others postpone its use, because they have observed that mercury does not prevent the occurrence of secondary symptoms.§ The military surgeons, especially, have remarked how soldiers return again and again to hospital, although mercury had been given for the cure of the primary lesion.

* Rep. p. 283. † Rep. pp. 50, 123, 143, 184.
‡ Rep. pp. 36, 304. § Rep. p. 53.

Some practitioners employ mercury immediately in the treatment of the initial sore,* sometimes to remove the induration ;† and in some cases this method has been recommended on the ground that the secondary symptoms are more severe, in proportion to the character and degree of induration in the infecting chancre.‡ On the other hand, several German and English surgeons prefer waiting for the manifestation of secondary symptoms. This latter is the practice which I adopt myself, and would recommend to others. I am, therefore, in the habit of saying to my pupils: Be in no hurry to administer mercury, for the cure of the initial ulcer, or the probable extinction of the disease which it is to develope. Hold your hand until constitutional symptoms manifest themselves. You will then be enabled to form some opinion as to the kind of soil in which the seed has been sown—as to the mildness or severity of the disease—as to the degree of aid which you may expect to meet with through the resisting powers of the constitution.

As to the manner in which the remedy should be administered, I decidedly adopt the Hunterian doctrine. Experience demonstrates that we cannot to a certainty extinguish the diathesis—that no amount of mercury, however great, whether given rapidly, or distributed over a length of time, will radically cure every patient.

In what manner should mercury be employed? The answer to this question will be influenced by the theories adopted as to the mode of action of the remedy. Surgeons, who entertain the hope of eradicating the disease, give mercury for a considerable period. M. Ricord's rule is, six months' treatment with mercury for the early symptoms, and a three months' course after they have disappeared. Mr. Lawrence, adopting Dupuytren's rule, gave "about the same quantity of

* Rep. pp. 423, 487. † Rep. p. 23. ‡ Rep. pp. 23, 281.

mercury for the secondary symptoms as was required for the cure of the primary sore,* but continued its use until the symptoms disappeared, unless such continuance seemed to do harm. For my own part, I adopt the doctrine of Hunter, although I do not follow his practice, either in giving mercury for the cure of the initial ulcer, or for the extinction of the diathesis.

With respect to the latter point, it may be objected that as syphilis is liable to break out over and over again, the method is bad, because it compels us to recommence a mercurial treatment on every fresh outbreak of the disease. This is true; but, weighing doubt against doubt, and difficulty against difficulty, I prefer the lesser to the greater evil. Some doubts as to the nature of the initial lesion often exist, especially when the ulcer has not been observed at an early period. Induration is slight in many cases; in others it is of short duration, and may have disappeared before we have been consulted on the case. Here the prudence of waiting for confirmatory signs is obvious, unless we adopt the more than questionable practice of administering mercury for every suspicious-looking sore on the genital organs.

Again, we have no assurance that prolonged courses of mercury will inevitably extinguish the disease, and prevent its recurrence; on the contrary, the fallacy of this notion may be exposed any day, by the observation of patients attending the Lock Hospital, who have been treated here or elsewhere by the metal for their primary lesion. Such being the case, I do not think that it is prudent to superadd a mercurial action on a syphilitic poisoning during such a period as six months, and then, perhaps, discover at the end that our remedy has been anything except an antidote. Besides, under the cautious manner in which we

* Rep. p. 424.

now employ mercury, no great danger arises from our being compelled to give it a second or even a third or fourth time; and, if the malady should break out at a later period, it will probably require iodine, not mercury.

Another important point to be considered is the manner in which mercury should be employed, so as to produce the best effects in any given case. Should the remedy be pushed to salivation at once? What rules have we for our guide as to the quantities which should be given in different cases? The system may be brought rapidly under the influence of mercury, or in a slow and gradual manner. What are the conditions which require rapid action? What those which demand a milder and more protracted method of administering the remedy?

It is impossible to answer these questions in a general manner. Clinical experience seems to have established the principle that in ordinary cases the most prudent method is that which consists in combating outbreaks as they arise by mild, yet effectual courses of mercury. On the other hand, we know that when it attacks certain organs, acute syphilis must be met by rapid action, otherwise the organ may be destroyed, or injured in a serious manner. I have also found it necessary to push mercury rapidly in certain cases of eruption, seated chiefly about the face, where it is expedient to get rid of the external manifestations as quickly as possible.

Beyond this our knowledge is rather negative than positive. We are better acquainted with those circumstances under which mercury should not be employed plentifully or pushed rapidly than with those which, considered generally, admit of the contrary practice. Mercury must be administered carefully, and with a sparing hand, to scrofulous subjects; it is altogether unsuited to cachectic patients during the stage of visceral syphilis, or to those

whose constitutions have been damaged under the combined influences of mercury and syphilis.

On the other hand, we have many grounds for believing that the curative action of mercury is more permanent than that of the iodide of potassium; and the mercurial treatment should, therefore, be preferred in obstinate cases of late secondary eruption, whenever the general health of the patient does not contra-indicate its use.

The rules which I would lay down for the administration of mercury at the commencement of the disease are the following:—

Do not measure the quantity you give, or the rapidity with which you push the doses, by any preconceived notions as to what the severity of the disease may eventually be.

Act cautiously; feel your way, as it were; and estimate the effects of the remedy by the influence which it exercises on the symptoms before you. As soon as these symptoms begin to yield, you have the measure of the quantity required. Keep up the influence for a short time, and, if things go on favourably, diminish the quantity, or at all events regulate it according to the progress of the symptoms as they yield or as they increase.

While pursuing this course, watch likewise the physiological effects of the remedy. Experience proves that as soon as the mucous membrane of the mouth exhibits signs of the action of mercury, we have proof that the constitution is also under the influence of the remedy.

Give mercury then until the gums are *slightly* touched, and no further; but do not forget this general rule, which I can lay down with confidence, that you must be guided by the effects produced on the symptoms, rather than by the quantity of mercury employed, or by the period of time during which it has been administered.

Form of Administering Mercury.—Mercury may be introduced into the system through the alimentary canal, the lungs, or the skin. The method generally employed is that by the mouth. Should this mode, however, be contra-indicated, we employ inunction, or fumigation by means of the mercurial vapour bath. A great variety of preparations have been employed for internal use. I shall only notice those most commonly used at the present day. M. Ricord gives the preference to the proto-iodide of mercury, a preparation introduced by M. Biett, of the Hospital St. Louis, in Paris. The ordinary dose is one to three grains in the twenty-four hours. M. Bazin affirms that he has never seen any advantage arise from carrying the dose beyond one grain daily. However, if it produce no effect after two or three weeks, some other preparation should be tried. The iodide of mercury acts slightly on the bowels, and, when the dose is increased, may occasion diarrhœa with colicky pains. To obviate these effects, the remedy is guarded by a small proportion of opium. In English practice, we generally employ calomel, blue pill, or Plummer's pill, and the perchloride of mercury, in doses varying from one-sixteenth to one-eighth of a grain three times a day. A preparation that I have found agree, internally administered, when many other preparations had to be abandoned on account of intestinal irritation, is the bi-iodide of mercury, in doses of the twelfth of a grain, taken night and morning. It has been objected to calomel that it is prone to irritate the alimentary canal, and run off by the bowels; but this action can generally be controlled by the addition of a small quantity of opium. Practitioners are more careful now, and many, especially the army and navy surgeons, have recourse to the perchloride with advantage, in doses

varying from one-sixteenth to one-eighth or one-fourth of a grain per day,* or thriee a day.†

In thc intermediate stage, betwcen the seeondary and tertiary periods, when relapses of secondary symptoms oecur, or when eertain tertiary affections are advanced out of their natural order, a mixed method, whieh eonsists in the eombined use of mereury and iodide of potassium, has been employed with advantage.‡ The remedies may be administered separately, or in the form of bi-iodide of mereury.§ This latter preparation is said to be very active, and not easily borne by many patients, exeept in very small doses; henee it is usually given in eonjunction with iodide of potassium. M. Gibert prefers the form of syrup, an ounce of whieh eontains one-fifth of a grain of the bi-iodide, and ten grains of the iodide of potassium.

Inunction.—This method is the most aneient, having been employed a few years after the appearanee of the outbreak in 1495. The strong mereurial ointment is the preparation now used; about a seruple is first daily rubbed in on various parts of the body, and the quantity is inereased after a few days.

Fumigation.—Some surgeons‖ prefer introdueing mereury through the medium of the skin, in the form of vapour. Mr. Henry Lee, in particular, advoeates this method, as being "by far the least disagreeable mode of administering mercury. It enables the surgeon to regulate the aetion of the remedy with the greatest nicety, does not irritate the skin, and does not endanger the patient's powers."¶ The preparation employed by Mr. Lee is calomel, and he has devised a simple and effeetual apparatus for administering this remedy under the form of vapour. It eonsists of a

* Rep. p. 123. † Rep. p. 282. ‡ Rep. p. 282.
§ Rep. p. 282. ‖ Rep. pp. 275, 304. ¶ Lect. p. 274.

small spirit lamp, which sublimes the calomel, and boils the water at the same time. The patient sits over the lighted lamp, with an American cloak or a Mackintosh round his neck. He thus becomes surrounded with the calomel vapour, which he generally inhales, mixed with air, for two or three minutes during each bath. The duration of the latter is from fifteen to twenty minutes. In addition to the general advantages of this mode of administering mercury, Mr. Lee observes, that the remedy being applied to the whole surface of the skin, and to the mucous membranes, exercises a local action on parts which are peculiarly liable to be affected in secondary syphilis. The average time required for treatment with the calomel vapour bath at the Lock Hospital was, for males, primary affections, twenty-three days; secondary, thirty-one days; tertiary, sixty-one days.

The bath is employed every night, and acts rapidly, for "within the first few days, a slight tenderness, redness, and swelling of the gums indicate the mercurial action;" yet salivation very rarely occurs, the mercurial effect being probably controlled by the free secretion from the skin, which the combination of steam and calomel produces. We possess few reliable data from which we can deduce the average or even probable time required for the cure of a patient affected with syphilis in its secondary form. The results of private practice cannot, for obvious reasons, be invoked. Mr. Blenkins states that the time required to cure secondary symptoms varies from one to four months.* Mr. Wells estimates the average time at forty-one days.† Mr. Gascoyen has furnished the average time of treatment at the Lock Hospital for the year 1864, and for patients labouring under constitutional syphilis.

* Rep. p. 176. † Rep. p. 128.

MALES.

		Days.
Patients treated with mercury.	Average time in hospital	57·38
Without mercury.	Ditto ditto ..	66·25

FEMALES.

Treated with mercury.	Average time	52.72
Without mercury.	Ditto ditto	78·52*

The following rules for the administration of mercury, taken from the last edition of M. Ricord's lectures on chancre, may be consulted with advantage.

Ricord's Rules for Treatment.

1.

Employ the internal mode of administering mercury, whenever the state of the digestive organs will permit you to do so. If they contra-indicate the internal use of the remedy, apply it through the skin.

2.

When the condition of the digestive organs or of the skin does not admit of continuing either the internal or external methods for the required time, then employ them alternately.

3.

In certain patients, the employment of mercury internally, or through the skin, is absolutely contra-indicated. The introduction through the lungs must be had recourse to in such cases.

* Rep. p. 314.

4.

Although the curative effect of mercury is independent of the form in which it may be administered, we should not neglect the form altogether. Certain individuals are refractory to some preparations of mercury; others, to other preparations, or modes of administration. In such cases, the method employed will fail, and we must endeavour to discover the one which best suits the peculiar constitution of the patient. For example, and taking inunction as an illustration, I have seen many patients unaffected by long-continued frictions with the strong mercurial ointment, yet who were cured or salivated after four to five days, by the application of a mercurial plaster to the thighs. The same remark applies to the internal use of mercury. One preparation has remained without effect on a patient, but, on changing the preparation, I have effected a rapid cure, or found excessive action of the remedy.

Of the various preparations employed, the one most efficacious, and most generally applicable, is the proto-iodide of mercury, combined with extract of lactucarium, and a small proportion of opium. We commence with one pill a day, increasing the dose, according to the indications, to two or more pills daily.

5.

No fixed rule can be laid down for the quantity of the iodide to be administered daily. We commence with a medium dose, and increase it gradually, until we find a favourable effect produced. The quantity suited to the individual has then been attained.

6.

The pathological or the curative effects of the remedy generally manifest themselves within *eight* days. Hence,

should no injurious or curative effects appear, the dose of the remedy should be increased every eight days.

7.

As soon as an improvement appears, the proper dose has been arrived at; it should be increased no longer.

8.

Should the remedy produce any unfavourable accidents, as stomatitis, irritation of the bowels, &c., we must modify its use, or suspend it at once; for experience has abundantly proved that, in such cases, the curative action of the remedy is almost always annulled, even when the symptoms of the disease have not been aggravated.

9.

Should the constitutional symptoms persist after the disappearance of the morbid effects of mercury, the use of the latter may be resumed—the dose, preparation, and mode of administering it being modified according to the accidents which it had produced on its first trial.

10.

With these precautions, a tolerance of the remedy may be obtained; but it must be confessed that we are sometimes compelled to suspend the use of mercury during the development of certain syphilitic affections.

11.

It is not to the total quantity of mercury administered that we are to look for the cure of the disease, but to the action of

the particular dose, when we have arrived at its determination. One patient, for example, who has taken a large quantity of corrosive sublimate, distributed in small doses through a long period of time, may be less mercurialized than another patient, who has taken a much smaller quantity in a shorter time, and in doses that are better suited to his constitution.

12.

The curative effects of mercury are proportionate to the strength of the dose which the patient can bear, divided by the time required for toleration. The greater the dose, and the less the time, the more efficacious will be the remedy. To arrive at anything practical in this respect, we must arrive at the relative tolerance of different individuals, and measure the quantity of mercury "definitively required" by its curative effects on the symptoms which we have to combat. Any dose which does not ameliorate the symptoms is too small; any dose beyond this, and producing morbid effects, is too large.

13.

Finally, some constitutions are altogether refractory to the action of mercury, and on these syphilis commonly exercises its most baneful influence.

Having thus directed attention to the various modes of administering mercury, and to the principles by which the use of this remedy should be regulated, I shall describe the method which my own observation and experience have led me to adopt.

Whenever the secondary symptoms are well marked—when the nature of the disease and the constitution of the patient indicate the use of mercury—when it is probable that

the eourse of treatment will be prolonged—in such eases mercury should be administered under the form of inunetion. This latter method possesses most of the advantages whieh the mercurial vapour-bath has over the internal administration of mereury, and, in my opinion, is superior to the vapour-bath in two important respects. It is not so lowering, and it does not render the patient so suseeptible to the effeets of eold. Another important advantage possessed by inunetion over any other method is, that it is manageable. It enables the surgeon to regulate exactly the degree of influenee which he may desire to exereise on the eonstitution.

The patient, as a general rule, may be direeted to rub in half a drachm or a draehm of the strong mereurial ointment every night. The part which I seleet, for divers reasons, is the soles of the feet. One obvious advantage is, that the mercurial ointment in this situation never gives rise to erythema, as it eommonly does in other situations, where the skin is more sensitive. Thick woollen soeks are to be worn night and day. Should the patient make any objeetion, the ointment may be rubbed in on the thighs, or underneath the axillæ. Every four or five days the feet should be well washed, and the soeks changed, to ensure absorption, and to prevent irritation of the nails. The quantity of ointment mentioned above should be increased or diminished aeeording to the effect which it produees on the symptoms of the disease, and on the eonstitution of the patient.

In a eertain class of cases, not very frequently met with, it is desirable to keep the patient under the influence of mercury for a considerable time. Here great attention becomes necessary, to prevent any injurious effeets from the long-continued use of the remedy. The method which I adopt in sueh eases is the following. A strip of flannel, say from $3\frac{1}{2}$ to 4 inches wide, is stitehed inside an

abdominal belt. About an ounce of the strong mercurial ointment is spread on the flannel, and the belt is worn round the waist, next to the skin, night and day. Fresh ointment should be spread on the flannel every four or five days. When it gives rise to erythema, the belt should be worn during the day-time only, or discontinued until the irritation has subsided. It often happens that mercury excites erythema at first, which soon passes off, and does not recur. The patient should also be directed to take a warm bath every six days. When mercury is administered in this way, it is unnecessary to confine the patient to the house, under ordinary circumstances. Any acute attack, such as iritis, &c., would of course form an exception. Strict attention to diet, and to the mode of living, is essential; yet a severe regimen is not required. The patient should not live too low; the diet should be simple, rather nourishing than otherwise, with from one to two pints of stout daily. Wine and stimulating liquors, especially spirits of every kind, should be abstained from. A regular habit of life will greatly assist towards the cure, and abstinence from all depressing excesses, avoidance of exposure to wet and cold, &c., are to be strictly enjoined. It may be safely averred that if the treatment fail in some cases to effect a cure, the cause of failure can be traced more frequently to the conduct of the patient than to the inefficacy of the remedy.

The principal advantage which I would attribute to the method now described is, that it enables us to keep the patient slightly under the influence of mercury for four, five, or six months, without any danger to his general health. This is an essential, yet difficult point to attain. Experience teaches us that in certain cases of secondary syphilis a prolonged course of mercury alone will ensure

anything resembling a permanent cure. But experience likewise proves that prolonged courses entail certain disadvantages and risks, for which the surgeon must be prepared, and which he must endeavour to obviate or diminish.

As an indication of the manner in which the patient bears the prolonged course of mercury now spoken of, I always look with much anxiety to his weight. If he does not lose weight, you may conclude, *cæteris paribus*, that the remedy is doing him no harm. Whenever a marked loss of weight becomes manifest, it will be advisable to discontinue the mercury, for some time at least; and this leads me to mention the use of cod-liver oil in conjunction with a course of mercury. The administration of the oil is most beneficial, not only as regards the general health of the patient, but as influencing many of the syphilitic symptoms. The oil should not be given at once in conjunction with the mercury, but after some time, when the patient has begun to feel the influence of the remedy. The latter should never be pushed far enough to salivate, or make the mouth sore. The faintest mercurial fœtor of the breath, or the sensation of the teeth, are sufficient indications that we have reached the limit beyond which the remedy should not be carried. This point, however, has been already discussed.

Scaly eruptions, especially psoriasis, under its plantar or palmar forms, are particularly obstinate, and may require a long mercurial course—much longer, according to my observation, than any other kind of secondary affection. In such cases we sometimes find it necessary to keep the patient *slightly* under the influence of mercury during six to eight months. The effects of the remedy must be carefully watched during this protracted treatment. The practical rule will be to continue the mercury so long as it acts

beneficially on the eruption, and the clinical rule is that the remedy does continue so to act until all trace of the cutaneous disease has faded away. As soon as this result has been obtained the patient should be sent to the country, or, if possible, to the seaside. It will also be prudent, even in cases where the disease seems to have been extinguished, to prescribe small doses of the iodide of potassium, combined with ammonia, and to continue the iodide for two or three months after the mercurial course. The combination of ammonia with the iodide is useful in most cases. It seems to render the iodide more active, and enables some patients to bear the remedy, which otherwise is not well tolerated by them.

Patients who have been lowered by constitutional syphilis require a tonic treatment, and I have found the *small* doses of iodide to act more beneficially as a tonic than either quinine, iron, or any other remedy of the same class. In private practice I have observed many cases which illustrate not only the advantage, but the necessity of administering the iodide with the object just mentioned. Patients begin to lose flesh, and to complain of general debility, with want of appetite, sleep, &c., as soon as the iodide has been suspended; and so clearly is the connection between the use of the remedy and its beneficial effects established in their minds, that they request permission to resume it at once. The iodine may be given in conjunction with sarsaparilla. I have no great faith in the latter myself, but may mention that the old surgeons at this hospital appear to have cured cases of tertiary syphilis by administering large doses of the decoction of sarsaparilla, without any other adjuvant. This occurred before the use of iodine was known. The dose of the decoction was one pint daily, but the time required for cure was much longer than under the modern method. In

eases of syphilitic iritis and deep-seated inflammations of the eye, where it is urgent to bring the patient rapidly under the influenee of mereury, it will be advisable to administer the remedy internally. The preparation to be employed in such eases is ealomel: three grains, eombined with a quarter or half a grain of opium, in the form of a pill, are given night and morning, and are continued until the effeets of the metal beeome pereeptible on the gums.

In some eases reasons may exist to prevent the patient from employing inunetion. Mereury must then be administered internally. The ordinary pill of this hospital is a good preparation—four grains of blue pill, with one-sixth of a grain of opium. The proto-iodide of mercury is a favourite preparation abroad, and may be employed with advantage, in doses of one-quarter to one grain, with opium, or the bi-iodide, when a more aetive preparation is indicated. Many patients undoubtedly bear the internal use of mereury well, but several others are unable to take it by the mouth for any time, or under any form. This may arise from idiosynerasy, or from the loeal effeet of the remedy on the stomaeh and bowels, even when guarded by opium.

In sueh cases we have no ehoiee left, and must have reeourse either to inunction or to the mercurial vapour-bath, of which I have already spoken. I must, however, say that I have witnessed very many eases of obstinate eruptions, which have resisted mercury when administered internally, or through means of the vapour-bath, yet have entirely disappeared when inunetion was had recourse to. This remark applies to all preparations of mercury. One preparation will effeet a temporary eure when all other preparations appear to fail; but after failure from all other methods, I have seen no plan so generally sueeessful as that of inunetion. In all obstinate eases, therefore, I prefer the latter method, as

being the least injurious to the general health, and the most efficacious mode of administering the remedy, though in slight cases I do not employ it, as a good result can often be obtained by giving it internally. It remains, however, to notice a class of cases with which every surgeon must be familiar, who has had to deal with syphilis on an extensive scale. Some patients have undergone a complete course of mercury, conducted with care and discrimination. The mercury has been followed by iodide of potassium, to which a fair trial has also been given; yet these patients continue to suffer from time to time under relapsing symptoms, which no ordinary treatment effectually removes. The form most commonly assumed by these persistent attacks is faint palmar psoriasis, or the occurrence of ulcerations about the tongue and throat. In cases of this kind I have seen the most satisfactory results produced by an eight-day course of what is called Zittmann's treatment, which has removed in a short time ulcerations about the mouth and throat that had resisted for many months all ordinary treatment.

This is a simple method. The patient is confined to bed during the course of the treatment, which is seldom prolonged beyond eight days. Three pints of the strong decoction, hot, are given in the morning, between seven and ten o'clock, and three pints of the weak decoction, cold, are given in the afternoon, between three o'clock and six. The diet is simple and rather scanty. At eleven o'clock A.M., breakfast, consisting of coffee, bread and butter, and a mutton chop; at seven o'clock P.M., tea, composed of tea, with bread and butter, and a beef-steak. No other food is taken during the twenty-four hours, nor any kind of drink. This method appears to be essentially eliminating: the remedy acts on the bowels, skin, and kidneys, producing frequent and copious dejections, by which the strength of the patient is reduced,

but strength and health are quickly regained in ordinary cases.*

Local Effects of Mercury.—During the administration of mercury, at the early period of the disease, it is not as a rule necessary to confine the patient in the house, or to enjoin any special regimen. Yet attention to hygiene is not to be neglected. The duty of the surgeon is equally clear. We are not to dismiss the patient with a box of pills in his pocket—one to be taken night and morning—but should carefully watch the effects of the remedy, during the first ten

* Zittmann's decoction. Strong.

Take of sarsaparilla	12 ounces.
,, water	72 pints.

Digest for twenty-four hours.

Then add—

Alum, Sugar } of each	6 drachms.
Calomel	½ an ounce.
Prepared cinnabar	1 drachm.

Place the ingredients in a linen bag, and boil the whole down to 24 pints.

Towards the end of the boiling, add—

Pounded anise and fennel seeds, of each ..	½ ounce.
Senna leaves	3 ounces.
Liquorice root	1½ ounce.

Strain the decoction, and allow it to clear by deposition, after which it may be decanted for use.

Zittmann's decoction. Mild.

Take of sarsaparilla	6 ounces.

Boil them with the residue of the ingredients employed to make the 24 pints of strong decoction, 72 pints of water having been previously added, and reduce the whole, by boiling, to 24 pints.

Add, towards the end of the boiling—

Lemon-peel, Cinnamon, Cardamoms, Liquorico }	8 drachms.

Strain and decant as before.

days or so. If the usual doses have been administered, we may expect to find signs of the action of mercury on the system in about five to eight or ten days. These signs are to be looked for on the mucous membrane of the mouth, for one of the earliest effects of mercury is to produce irritation of that membrane followed by more or less salivation, if the remedy be continued without diminishing the doses.

We may distinguish two degrees in the action of mercury. At first the patient experiences an unpleasant feeling in the mouth, with a slight metallic, brassy taste. The teeth, he will tell you, feel as if they were too long, and they leave their marks on the sides of the tongue. A slight red line then borders the edges of the gums, and an increase in the quantity of saliva secreted takes place. The well-known mercurial smell of the breath now becomes sensible.

If the remedy be continued, the symptoms are aggravated. The mucous lining of the mouth becomes excoriated at the points where the teeth press on it. A greyish exudation lines the whole of the alveolar border. The salivation increases. Ulceration attacks various parts of the mouth, or fauces; and if through negligence or ignorance the remedy be pushed, as the phrase goes, for the purpose of combating the very accidents which it has produced, you may have the condition graphically described by Mr. S. Cooper in the following words: "When I was an articled pupil at St. Bartholomew's Hospital, most of the venereal patients in that establishment were seen with their ulcerated tongues hanging out of their mouths, their cheeks and gums ulcerated, their faces prodigiously swelled, and their saliva flowing out in streams. Yet, notwithstanding mercury was thus pushed, it was then common to see many patients suffer the most dreadful mutilations, in consequence of sloughing ulcers of the penis—many unfortunate individuals, whose noses and

palates were lost; and others, who were afflicted with nodes, necrosis, caries, and dreadful phagedenic sores."

Although there is little chance of our seeing a renewal of such scenes at the present day, you should not neglect to watch the physiological effects of the remedy. Some patients are affected more quickly and severely by the same doses than others. In slight cases of mercurial salivation, the bowels should be acted on by saline purgatives, and the mouth frequently rinsed with alum or borax gargles. Should ulceration exist, the sores may be touched with dilute muriatic acid; drinks acidulated with citric or sulphuric acid will also be found useful. Opium, even in large doses, does not allay the irritation, or arrest the tendency to ulceration. In severe cases of salivation, M. Ricord recommends the use of chlorate of potash, which he regards almost as a specific for mercurial stomatitis. The dose of the remedy is three scruples given twice a day in four ounces of the mistura acaciæ. Indeed, the experiments of M. Ricord would seem to establish that this remedy not only cures the affection of the mouth, but prevents its occurrence, if given at the same time as the mercury.

Local Treatment of Symptoms.

Although the internal treatment is sufficient to relieve, if not to cure, the constitutional symptoms, local remedies will often be found useful.

It is well known that the appearance of certain secondary symptoms is promoted by the action of local irritants. Thus the use of the pipe may determine an eruption of mucous papules about the lips and gums; while want of due attention to cleanliness is one of the most frequent causes of the same eruption when it appears on the scrotum, thighs, and

anus, or between the toes. Attention to cleanliness, to keeping the parts dry, and preventing opposite surfaces from coming into contact, will do much to prevent these early accidents of constitutional syphilis.

Mucous Patch.—Should these measures fail to prevent the eruption of mucous patches, the latter may be successfully treated by local remedies alone.

Any preparation of mercury will answer effectually, provided we avoid the form of ointment, which must be rigorously excluded. The preparation commonly employed at this hospital is the black wash, which in most cases effects the desired purpose remarkably well.

When the patch is seated between the folds of the skin or on some surfaces approaching mucous membrane in structure, its secretion is fœtid and very irritating. Here a solution of chloride of lime may be employed as a lotion twice a day, after which the surface should be dried with lint, and calomel powdered over the part. By these local means, the constitutional treatment being at the same time employed, these mucous patches, which appear at an early period, will generally be cured in ten or twelve days.

A patient was recently admitted into this hospital under my care, suffering under a series of condylomata, as large as a cheese-plate. They extended from the fold between the thigh and scrotum to the groin. The man was confined to bed, and calomel was sprinkled over the whole surface of the condylomatous patch. The effect was most rapid. At the expiration of four days the offensive and somewhat abundant secretion was completely stopped, and after ten days no trace whatever of the patch remained, except a dark, coppery stain.

Strict attention to cleanliness must be enjoined. In some situations, as around the anus, and between the labia, the mucous patches are dove-tailed as it were, and must

constantly be kept separate by pieces of lint moistened with the lotion. As the lint soon becomes saturated with fœtid irritating secretions, it must be frequently changed.

The mucous patch is also frequently found at an early period in the mouth and fauces. The patches or slight ulcers which they occasion may be touched lightly with lunar caustic; a gargle containing the perchloride of mercury is also efficacious.

For secondary ulcers of the mouth, &c., the best local treatment consists in touching them with a solution of the perchloride of mercury (six grains to eight ounces of water); to facilitate the solution, twelve drops of muriatic acid are added; the solution is applied by means of a camel-hair pencil.

Eruptions.—Local remedies for the purpose of hastening the disappearance of cutaneous eruptions are not so generally employed in this country as abroad. In some cases the eruption seems to resist for a time the influence of mercury. Warm baths, especially the vapour-bath, two or three times a week, will here be indicated. Should any irritation exist, a simple warm bath containing bran, starch, or some emollient is more suitable. The corrosive sublimate bath is efficacious in obstinate cases, but now seldom employed from fear of absorption, which is perhaps exaggerated.

The scaly eruption, under the form of psoriasis, and especially of psoriasis palmaris, is often very obstinate. In the treatment of ordinary psoriasis, the tar ointment is useful, and this remedy has been recommended by M. Emery, of the Hospital of St. Louis, for syphilitic psoriasis also; but I cannot say much in favour of local means from my own experience. Dr. Bumstead* speaks favourably of the applica-

* The Pathology and Treatment of Venereal Diseases. Philadelphia, 1864, p. 536.

tion of glycerine and oil of cade in equal parts for palmar psoriasis.

Alopecia is a disagreeable accident, which occurs at various periods, and is very frequent. The loss of hair may extend to the eyebrows also. The early form of alopecia is never followed by baldness, and never requires local treatment. At a later period, when the scalp is the seat of small pustules, and the hair begins to fall off, local remedies may be required. The hair, in such cases, should be cut close, and the scalp rubbed with stimulating lotions, as the tinctures of bark, cantharides, &c., or with the ioduret of mercury ointment. The form of baldness which depends on ulceration of the scalp is irremediable.

The tubercular eruption, when seated about the nose and face, is one which it would be very desirable to get rid of quickly; but it appears to be little amenable to local treatment. Ricord's favourite remedy is a strong solution of iodine; other French surgeons recommend covering the parts with the Vigo mercurial plaster. I cannot, however, say that I have obtained any evident benefit from local applications. The best is the per-nitrate of mercury. In endeavouring to promote absorption of the tubercle we may hasten its suppuration, which is the very accident we desire to avoid. I should, therefore, in all cases, place my chief reliance on an energetic use of the iodide of potassium.

Ulcers.—The remark which I have just made implies that I do not adopt the practice recommended in many works of opening tubercular or gummy tumours as soon as they begin to soften. While the general treatment is being pursued, it is much more prudent to trust to its effects, for we cannot tell when absorption may commence. If the tumour have suppurated, the ulcer may be treated with the per-nitrate of mercury solution, a solution of iodine, and the ordinary

dressings. In all cases of gummy ulcer, the practitioner should be on his guard against a tendency to perforation or rapid extension of the ulcerative process. When the tumour occupies the mouth or pharynx, &c., this precaution is particularly necessary. On the appearance of any destructive tendency, the iodide should be pushed rapidly, and the ulcer cauterized with undiluted tincture of iodine, lunar caustic, or even a more powerful escharotic, if required. The escharotic should be applied more freely to the edges of these ulcers than to other parts; but when the destructive process has fully set in, the whole of the ulcerating surface must be modified, as in cases of phagedena. In some of those severe cases the nose becomes implicated. Perforating ulcers of the palate may extend to the nose; or the tubercle may be developed originally in that part. The periosteum soon becomes detached; necrosis ensues; the osseous support of the organ gives way; the nose falls in, and there result those unsightly deformities which we sometimes witness among our patients. Little, I regret to say, can be done here in the way of local treatment. Crepitation of the affected bones will be an early sign of the mischief which is going on. Everything carious or necrosed must come away. You have, therefore, to promote the detachment of the necrosed parts by the usual means, and you may encourage the patient with the certainty that he will eventually get well; for these cases, though apparently so severe, almost always end in recovery.

The ordinary syphilitic ulcer may be safely left to itself. When accompanied by a certain degree of inflammation, it may be covered by a poultice, after which a mercurial dressing may be applied.* In my own practice I seldom inter-

* Either 15 grains of the proto-iodide of mercury to the ounce of lard; or ammon. mercury, red oxide of mercury, of each ten grains; Benzo. lard, one ounce.

fere with these sores, unless special indications for local treatment exist.

Syphilitic Stains.—The copper-coloured stains and blotches which succeed some forms of eruption often leave unsightly marks behind them, and patients are, consequently, very desirous of being relieved from the stigma. I have found nothing more efficacious than the sulphur vapour-bath for the removal of these stains.

The late secondary and the tertiary symptoms will require considerable attention with respect to local, as well as constitutional treatment.

Iritis.—In this severe affection all surgeons are agreed as to the efficacy of mercury. The patient should be brought under its influence as quickly as possible; for any hesitation or delay may cause permanent deformity of the pupil, if not total loss of vision. The patient should be confined to a darkened room, the pupil should be kept permanently dilated by belladonna, or still better, by a solution of the sulphate of atropine (two grains to the ounce of water), a drop being placed under the lower lid two or three times a day. Calomel will be the most trustworthy preparation of mercury. It may be given, in the form of pill, three grains of calomel, with a quarter of a grain of opium, night and morning. If the inflammation is very acute, you must have recourse to local blood-letting. Even under favourable circumstances a cure cannot be expected before four to six weeks. The first signs of improvement consist in the cornea and vitreous humour becoming more clear, and the vision less clouded.

Sarcocele.—A local antiphlogistic treatment will be required in rare cases where the specific lesion is complicated with ordinary inflammation, either of the tunica albuginea or of the parenchymatous tissue of the testicle. This inflammation

is very apt to be followed by chronic induration of the tissue and retraction, which finally terminate in atrophy. It should be combated by local means as well as constitutional. The signs of a scrofulous diathesis must be looked for and their indications met. In ordinary cases, frictions with mercurial ointment may be employed, or a mercurial plaster applied; methodical compression according to Frikes' method has been used with advantage to complete the cure. The syphilitic testicle is sometimes a secondary symptom, in which case I should try the effects of mercury. On the other hand, when it occurs late, and can be traced to the development of gummy tumours, the ioduret of potassium is the remedy on which we should depend. Give it freely, and carry the dose rapidly to its full effect. It is a matter of the greatest importance to detect syphilitic disease of the testicle at an early stage, and combat it at once by energetic measures. The iodide will arrest the complaint during its earlier stages, but has no effect on the fibrous degeneration when once fully established. The local treatment, however, is of secondary importance in comparison with the constitutional.

Night or Bone-Pains.—The bone-pains, from which few syphilitic patients escape, are often very severe and persistent. Unlike the rheumatoid pains of the earlier stage, they may be confined to a particular part, in which they remain almost permanently fixed for months together. They are usually aggravated during the night, and hence their popular designation. These violent and fixed pains, especially when seated in the bones of the head, may possibly be connected with disease of the fibrous membrane. At all events, they are, in many cases, successfully combated by large doses of the iodide quickly repeated. Amongst local measures, blisters are the most useful, whenever they can be applied

immediately over the seat of the pain. Many surgeons employ local blood-letting, and cover the leech-bites with a poultice sprinkled with laudanum.

Periostitis is treated in the same way, by leeching, or by repeated blisters and the application of mercurial ointment as a dressing. The local abstraction of blood is indicated whenever inflammatory symptoms are well marked. Should suppuration ensue, the part must be incised at once, to prevent detachment of the periosteum.

The local treatment of osteitis, caries, and necrosis does not require any special notice. It must be conducted on those general principles which regulate the surgical treatment of such affections in non-specific cases.

Treatment of Tertiary and Quaternary Symptoms.

If the secondary symptoms have yielded to the judicious use of mercury, or to any other treatment which may have been adopted, we may have a long pause. The disease appears to have been extinguished, and anxious inquiries will be made respecting the possibility of a relapse, the propriety of entering into marriage, &c. Answers to these questions should be guarded. Some practitioners do not hesitate to promise absolute immunity when the patient has remained well for a year after the disappearance of secondary symptoms; but those whose experience has been extensive are less sanguine. We are, however, justified in encouraging the patient by hope; for in a large number of cases, after a proper course of treatment and a certain lapse of time, our patients continue well, and the children who may be born to them are healthy.

The accidents of the tertiary period of syphilis have been

already described. The remedy to be chiefly employed during this period is the iodide of potassium. The testimony of experienced surgeons is universally in favour of this precious remedy, for the introduction of which we are indebted to the late Mr. Wallace, of Dublin.

The effects of the iodide on the economy are varied and extensive, some being analogous to those produced by mercury. It acts on the skin, the mucous membranes, the alimentary canal, the kidneys, and the circulation. A peculiar kind of coryza, and irritation of the buccal membrane, are its first effects. The saliva is increased in quantity; the patient experiences a sort of metallic taste in the mouth, but there is no tendency to ulceration.

It is necessary to bear in mind this effect of the iodide on the mucous membrane of the nares, whenever we have to treat cases in which the nasal bones are implicated. The same kind of irritation may be observed in the mucous lining of the eyes and eyelids, giving rise to serous infiltration of the parts, and occasionally to some intolerance of light.

The alimentary canal is seldom affected to any injurious degree by the use of the iodide. Small doses of this remedy have, on the contrary, a beneficial effect on the digestive organs; the appetite is increased, the digestion improved, and, in several cases, the patient becomes fatter. In larger doses, the remedy may produce some pain in the stomach, accompanied by regurgitation of a thin fluid, as in waterbrash; or it may give rise to vomiting and serous diarrhœa. But I am inclined to think that these, and many other of the accidents attributed to the use of the iodide, depend on impurity of the medicine. They were more frequent formerly, when the doses employed were much smaller than those we are now in the habit of giving. As to iodism

properly so called, we never meet with it now under a regularly conducted course of treatment.

The iodide is carried off by the kidneys rapidly and in large quantities; hence the urine may become irritant, and produce a slight degree of scalding. I have never noticed this latter symptom to any troublesome extent, although the presence of iodine in the urine may be detected half an hour after the ingestion of the remedy. Experiments made at the French Lock Hospital, by M. Guerin, show that nearly four-fifths of a given dose of the iodide are eliminated by the kidneys during the forty-eight hours which follow its administration. This fact may, perhaps, assist in explaining why the effects of the iodide are less permanent than those of mercury.

When pushed to very high doses, the iodide sometimes affects the head. The patient complains of headache and occasional vertigo; or the intellectual faculties may be slightly disturbed; but these symptoms disappear as soon as the remedy is discontinued.

Iodine was formerly accused of acting in a peculiar manner on the mammæ and testicles, the atrophy of which glands it was said to produce. I have not seen anything to confirm an idea which now appears to be exploded. The atrophy of syphilitic testicle was at one time exclusively attributed to iodine; but we now know that it is an effect of the disease, not of the remedy.

Very generally, the use of the iodide is followed by a peculiar eruption, which appears within a week or so after the administration of the remedy. It consists in the development of small, round papules of a red colour, and slightly inflamed, on various parts of the body. The papules are not grouped together, but scattered irregularly about the neck, belly, thighs, &c. They are not attended by itching or

any degree of irritation. They come and go as long as the remedy is employed, and disappear within a few days after its cessation. This cutaneous eruption, produced by the iodide, is insignificant, and does not require any local treatment whatever.

Various other eruptions have been described, but they are so rare as to require little notice. Mr. Langston Parker mentions a tubercular affection of the tongue, occasionally accompanied by fissures, which bears much resemblance to syphilitic tubercle. This eruption, however, like the others, disappears as soon as the remedy is discontinued. In other cases, the use of the iodide is said to have been followed by an eczematous eruption of the scalp or scrotum, or by a general eruption of small tubercles, which terminate in desquamation, or in the formation of ulcers, leaving bluish-red stains behind them.

The *modes* of administering the iodide of potassium are much more simple than those employed for mercury. It may be given as a solution in water, in the ordinary diet-drink, or in some tonic syrup. The addition of a small quantity of ammonia to each dose will be found useful in most cases. The choice of the vehicle in which the iodide is dissolved will depend on certain circumstances. When the patient is debilitated, or requires tonics—as is very frequently the case—many surgeons add some of the vegetable tonics, such as quinine, quassia, gentian, calumba, &c., to the iodine mixture. In other cases, where the constitution has been disturbed, and debilitated by repeated courses of mercury, the compound decoction of sarsaparilla will form a useful vehicle for the administration of the remedy. The efficacy of the woods has been greatly exaggerated; it may be well, however, to employ them in conjunction with the specific remedies in some cases. The fluid extract of sarsa-

parilla is a convenient form for use in private practice. Many surgeons consider that it is necessary to dilute the iodide largely, and therefore administer it in conjunction with large draughts of the decoction of sarsa, or other fluid vehicle. The French surgeons, on the other hand, usually combine it with a tonic syrup, containing gentian, quassia, sarsaparilla, &c. As I have already mentioned, the action of the iodide is increased by the addition of a small quantity of ammonia to each dose. Some surgeons employ the carbonate, others the muriate of ammonia. The iodide of ammonium has been tried as a substitute; but this preparation is more stimulating, and does not possess any special advantages.

In order to avoid the local effects of the iodide, and accustom the patient to its use, I usually commence with three-grain doses three times a-day, and increase the dose every fourth day by one grain, until a scruple dose is arrived at. This quantity is sufficient in the majority of cases, and for an ordinary course of treatment. The following formula is the one which I commonly employ:—

Iodide of potassium, 1 scruple,
Aromatic spirit of ammonia, 25 drops.
Tincture of orange-peel, 1 drachm.
To be taken in a tumbler of water or other fluid.

It has been laid down in general terms, that the iodide of potassium is the remedy to be employed during the tertiary period of syphilis, and for those affections which occur at a later time, when the deep-seated organs are attacked. But this general rule requires some qualification. Circumstances may render it necessary to employ the remedy at a much earlier period. I have already shown how certain pustular eruptions, such as deep ecthyma and rupia, may present themselves as early manifestations. In many of these cases the disease has a tendency to assume a malignant form;

the ulcers spread rapidly and penetrate deeply; the patient's constitution is evidently affected in a severe manner; his spirits are depressed; he loses weight quickly; has no appetite, and is worn down by night-sweats. This condition is invariably aggravated by the use of mercury, for which the iodide should be substituted, without any regard for the period of the disease at which the symptoms may have presented themselves.

The different effects of mercury and iodine on different forms of eruption are sometimes seen in a curious and striking manner, when the iodide is administered to a patient who is under the full influence of mercury. I have observed this difference in several cases, one of which may be briefly noticed.

An in-patient at the Lock Hospital, affected at the same time with an eruption of ecthyma and psoriasis, was undergoing a mercurial treatment. The spots of psoriasis became rapidly fainter, but the ecthymatous ulcers were influenced very unfavourably, and spread so quickly, that it was necessary to abandon the mercurial treatment. The iodide of potassium was now substituted, in increasing doses. The effect was soon manifest; the ulcers took on a healthy action and quickly healed, but the psoriasis became brighter and larger, while fresh spots appeared on other parts of the body. The fresh spots of psoriasis were subsequently treated by a mild mercurial course, and the patient left the hospital cured.

The iodide treatment is also specially indicated for diseases of the periosteum and bones; and for late secondary or tertiary ulcers, particularly those of the throat. The fibro-nuclear or gummy degeneration is, above all other morbid conditions, comprehended under this rule. Finally, it may be laid down, as a general principle, that the iodide of

potassium should be employed for the treatment of all symptoms occurring during the quaternary or visceral period of constitutional syphilis; yet here, also, it will be borne in mind that the time of appearance must not be taken as an absolute criterion; for symptoms of visceral disease sometimes manifest themselves at a comparatively early period.

Having established in a general manner the nature of the cases for which the iodide of potassium is indicated, we have next to inquire how the remedy should be employed so as to obtain the greatest advantage from its use. In relation to this part of the subject, it is usually laid down that the rules for the exhibition of the iodide are the same as those which govern the use of mercury; but there are some important differences in the action of these remedies which must be taken into account. Iodine is a much safer and more manageable medicine than mercury. If the latter remedy be employed in large and quickly-repeated doses, injurious consequences may result. Again, protracted courses of mercury are always attended by certain disadvantages, to overcome which great care and attention are required, especially when the patients are cachectic, or have been debilitated by previous excesses. One rule, however, is common to both remedies: give the iodine in increasing doses, until it produces an effect on the symptoms. The proper dose has then been arrived at. The quantity required, and the rapidity with which the iodide should be pushed, are also regulated by the same principles as those which I have laid down for the exhibition of mercury. They will depend on the nature and circumstances of each case. Under ordinary conditions, the dose of the iodide may be carried to two or three scruples daily, by gradually increasing the quantities during the first eight days. Should this dose fail to produce an effect, it

must be gradually increased; for many of the severer forms of late and visceral syphilis will require one drachm, or even larger doses, three times daily. The tolerance of this remedy, and the rapidity with which it acts on the disease when suitably employed, are most remarkable. The beneficial effects of carrying the remedy to its curative dose are constantly seen in practice. I have frequently been consulted by patients who had been taking, without any benefit, though for a long time, comparatively small doses, say, thirty grains of the iodide daily. On employing the remedy more energetically, the effect has been most rapid and satisfactory. This remark particularly applies to cases of old and extensive tertiary eruptions, to all forms of the fibro-nuclear degeneration, and most strikingly to cases of syphilitic sarcocele. In these, and in analogous cases, the effects of the iodide far surpass those produced by mercury, even when administered for those affections to which it is most suited.

Whenever any important organ, such as the brain, is attacked, the practitioner should act without hesitation from the commencement. In these severe and dangerous affections, small doses are futile. In the great majority of cerebral affections, the morbid change is fibro-nuclear. The iodide produces absorption of the gummy element in these cases rapidly and surely; but when the tumour or deposit has given rise to organic changes in the adjacent nerve-tissue, we cannot expect to obtain the same beneficial results. I would, therefore, emphatically recommend the immediate use of large doses in all cases of severe cerebral disease. Small doses may perhaps keep the affection in check; but to obtain marked and decisive results, the iodide must be employed in drachm doses, or even more.

A case now under my own care illustrates the necessity of our having recourse to the practice advocated. A gentleman

labouring under constitutional syphilis was attacked by epilepsy and partial paralysis. He took the iodide of potassium in moderate doses for some time without any benefit; the dose of the remedy was then rapidly carried to one drachm three times a day, on which its curative effects at once became manifest.

One point, however, should be borne in mind with respect to the iodide. If its effects be more rapid than those of mercury, they are less lasting. Whether or not this depends on the nature of the affections against which the iodide is usually employed might fairly be discussed; but all practitioners are agreed as to the fact. Another circumstance which I have observed more than once myself must lead to reflection. A patient is undergoing a course of the iodide for some late tertiary affection, yet, while under the full influence of the remedy, which is acting favourably on the testicle or eye, he is attacked by severe symptoms of organic cerebral disease. How are we to explain this? Does it lead to the inference that the remedy merely acts on the product, and not on the diathesis—that it combats the existing lesion, but leaves untouched its constitutional cause? However this may be, the tertiary and quaternary symptoms are apt to recur over and over again as soon as the remedy is suspended; and hence I am in the habit of recommending patients to continue it for six months, in diminished doses, after an apparent cure has been obtained. I am not, moreover, disposed to regard a properly conducted course of the iodide so inefficacious against relapses as many writers consider it to be. The disease, it is true, will often recur; but relapses are likewise frequent after full courses of mercury; while the iodide possesses this immense advantage, that it may be administered in large doses over and over again without danger, which certainly cannot be said of mercury. By

the persevering use of the iodide, and strict attention to the rules of hygiene, the constitution is enabled to struggle against the disease, and apparently to overcome it. The patient may then be said to be cured, in the same sense as secondary symptoms are said to be cured by mercury, although relapses are more to be apprehended in one case than in the other.

I have on more than one occasion observed a peculiar kind of relapse, which, so far as I know, has not been described by previous writers. This consists in the recurrence, not of actual syphilitic symptoms, but of syphilitic cachexia in various degrees, after the discontinuance of the remedy; the patient, in fact, is compelled to resume the iodide, and continue its use almost as an article of diet. The following case, which I relate briefly, may serve as an illustration:—

Case 11.—Some five years ago, a gentleman came under my care for syphilitic sarcocele. He was treated with the iodide, and soon recovered. A few months afterwards, he got married, but continued to take the remedy, according to my advice, once a day, for some time. I had lost sight of the patient for two years, when he called on me, and gave the following history. The testicle had remained perfectly well, without any tendency to re-enlarge, nor had any other symptom of syphilis appeared; but he found it quite impossible to leave off the iodide. On the first attempt, he discovered that his general health began to decline two or three weeks afterwards; he became weaker, his appetite failed, he lost weight, and night-sweats ensued. As he happened to reside in the country at this time, he resumed the iodide without consulting any medical man; the appetite at once improved, and he quickly recovered his usual health. He now repeated the same experiment, but under the advice of a physician, who ordered him to go to the sea-side, and to take quinine, with iron. The change of air and of treatment was not attended by the results expected; the symptoms already described began to manifest themselves again, and the patient was again compelled to resume the iodide. He had also tried various baths and waters on the Continent, amongst others those of Aix-la-Chapelle, but always without effect. I advised him to make an experiment, and try what was the smallest dose necessary to keep him in health,

ordering three grains of the iodide, fifteen drops of the aromatic spirit of ammonia, and one drachm of tincture of orange-peel, to be taken in water every morning. This small dose was found sufficient to keep the patient in excellent health, while it might be omitted for a short time without inconvenience; but any lengthened omission was sure to be followed by the usual results. The last experiment which the patient made on himself was in the summer of 1868, at St. Leonards; but on this occasion he experienced what he considered as an attack of rheumatism, in addition to the general debility and night-sweats, &c. The iodide of potassium, in five-grain doses, removed the pains and other symptoms.

It is unnecessary to repeat what I have already said concerning the propriety of attention to hygiene during the treatment of syphilis in its later stages. The general rules are the same as those which apply to other cachectic states of the constitution, with the additional encouragement towards perseverance derived from the knowledge that syphilis has a tendency to wear itself out, and that slight assistance often enables the constitution to struggle victoriously against it. Mental excitement of all kinds should be particularly avoided, because, so far as our knowledge extends at present, the brain seems more liable to be attacked than any other important viscus. When circumstances permit, it will be well to assist or consolidate the cure by a course of baths and waters. Those containing sulphur are generally preferred. Aix-la-Chapelle is conveniently situated for English patients. As eliminating agents, the sulphur baths and mineral springs are probably efficacious, without possessing any specific influence. At many of the watering places, the resident practitioners are in the habit of administering the iodide of potassium in conjunction with the baths. The practitioner must not, therefore, be discouraged because his efforts are not at once crowned by success. In these rebellious cases, the treatment must be prolonged for a considerable time; suspended if necessary, and then resumed again. It is with syphilis as other chronic diseases; when they have been established in the constitu-

tion, pervade the whole frame, and become chronic, they require a chronic treatment. So with visceral syphilis; the acute symptoms are relieved or disappear; but they often return again in a milder form, and require to be treated with the same pertinacity which they manifest in their relapses.

In the treatment of cerebral syphilis, two points should be steadily borne in mind; the appropriate remedies should be administered without delay, and in such a manner as to act rapidly on the symptoms. Time must not be given to the syphilitic lesion to act on and disorganize the proper tissue of the brain. As a general rule, the iodide of potassium will be more suitable than preparations of mercury; but several exceptions to this rule may be noted. In some cases the patient does not bear the iodide well, or the remedy does not seem to produce any effect on the symptoms. Here, after a fair trial of the iodide, we must have recourse to mercury. Again, when symptoms of meningeal inflammation present themselves in tolerably healthy subjects, I am of opinion that mercury acts more rapidly than the iodide; at all events, the mixed method seems to me to be indicated. A combination of the perchloride with the iodide is more active than the iodide of mercury, which many continental surgeons employ. In several cases the nervous symptoms are evidently connected with some lesion of the osseous system. Nodes are discovered on some parts of the cranium, or the history of the case leads to the inference that irritation or inflammation of membranes have been excited by recent exostosis. Mercury is to be preferred in such cases, unless the general health of the patient contra-indicates its use.

The great benefit derived from the employment of bromide of potassium in cases of ordinary epilepsy has naturally led to a trial of the remedy in cases of syphilitic epileptiform convulsions. Dr. Bazire has appended a valuable note on the use of the bromide to his translation of "Trousseau's Clinical

Lectures."* The remedy appears to be applicable to nearly all cases of epilepsy and epileptiform disorders, whatever their cause may be; but Dr. Bazire has observed that it exercises little influence on those attacks of epileptic vertigo which sometimes accompany, or are mixed up with, the convulsive fits. The dose for an adult is from ten to fifteen grains twice a day, early in the morning and late at night, in order that the bromide may be absorbed quickly. The iodide of potassium, and a few grains of the bicarbonate of potash, should be added to each dose. In syphilitic cases, where we so often find a mixture of paralysis with convulsion, the iodide of potassium is an essential ingredient in the treatment. The bromide has a lowering effect on the general condition of the patient, and hence, as it must be continued for some time, some bitter tonic infusion should be employed as a vehicle. The effects of the bromide, like those of the iodide, are not always lasting. Even when the fits have entirely ceased for some time, they may recur, and hence it will be prudent to continue the remedy, in the doses mentioned above, for six or eight weeks; after which one dose may be given at bedtime. Dr. Bazire further recommends that the remedy should not be given up suddenly, but that the treatment should be resumed after intervals of a month or six weeks. Dr. Bazire is further of opinion that the administration of moderate doses of the bromide, continued for a considerable time, is followed by better results than the plan of attempting to crush the disease at once by inducing *bromism*.

An interesting case of the cure of epileptiform convulsions under the use of the bromide, followed up by a mixed treatment of the iodide and bichloride, is recorded in the *Lancet*.†

* Hardwicke, London, 1867. Vol. i. p. 98.

† November 14, 1868, p. 634.

Case 12.—The patient was a girl, 10 years of age, under the care of Dr. Radcliffe, in the National Hospital for the Paralysed and Epileptic, on the 27th April, 1868.

The history of the case, and the appearance of the patient, evidently pointed to inherited syphilis. In addition to various symptoms of the constitutional disease, she had suffered from fits for the past twelve months, the attacks occurring every two or three weeks. The effect of mercurial fumigations was first tried, but on the 7th April she was seized with a very severe fit of epileptiform convulsions, and appeared to be moribund, yet she rallied during the night.

Ten grains of the bromide of potassium were now ordered, every four hours, and the remedy was afterwards continued twice a day, until August, the dose being increased during the last six weeks of the period to twenty grains. It was now thought expedient to employ the iodide of potassium and the bichloride of mercury also. Under this treatment the patient improved rapidly, and there was no recurrence of the fits. She was now sent to Ramsgate, where she remained for a month, and had one severe fit there; but on her return appeared to be in excellent health and condition.

The nodes, ulcerations, &c., in the nose and fauces had disappeared, and her appearance generally presented the most striking contrast to that which existed on her admission to the hospital six months previously.

CHAPTER XIX.

SYPHILIZATION.

Local Effects of Repeated Inoculations—Auto-inoculation of Infecting Chancre—Illustrative Cases—Method of Practising Syphilization—Therapeutic Effects—Experiments at the Lock Hospital—Results—Boeck's Statistics—The Derivative Method.

Curative Syphilization consists in inoculating through the skin of a syphilitic patient the matter taken from a hard or soft chancre, or from the artificial ulcer of a person who is being syphilized, and in continuing the process so long as such inoculation produces a chancrous pustule. The series of ulcers so produced diminishes progressively in size; and when the inoculated matter no longer causes any effect beyond the production of an abortive pustule, the patient is said to be syphilized. He is refractory to any further application of the chancrous virus.

This curious effect of repeated inoculations has been established beyond all controversy. The idea of having recourse to this method, as a means of prevention and of cure, is due to M. Auzias Turenne. The practice was soon adopted by Sr. Sperino, of Turin; then by Dr. Boeck, of Christiania; and received a fair, though limited trial, at the Lock Hospital, in 1865-6. In this country it is still

adopted, as a method of treatment, by Dr. Watson, of Edinburgh.

Several interesting points connected with syphilization have been established. The purulent virus of soft or of hard chancre may be employed indifferently, so far at least as regards the curative effect. Dr. Boeck, in his earlier inoculations, employed the matter of soft chancre. Subsequently he preferred that of hard chancre.

Dr. Watson, though fully adopting the doctrine of an essential difference between the two species of chancre, yet always employs the pus taken from a soft sore. This latter is much more active, and produces a local effect with much greater certainty on a syphilitic patient than does the matter of indurated chancre, even when stimulated artficially to the secretion of pus. The possibility of auto-inoculation with the matter of infecting chancre has been doubted by the French school, but the following cases prove that effective inoculation may be obtained, although with some difficulty. This fact was established for the first time in this country by my experiments in the Lock Hospital. The cases illustrate the mode of proceeding by syphilization, for the cure of the constitutional disease.

Case 13.—Charles D., aged 20, admitted into the Lock Hospital, Sept. 10, 1865. He had a well-marked indurated chancre in the fossa on the right side of the penis, soon followed by indurated glands in the groin. As we were desirous of watching the natural history of syphilis, a simple treatment was pursued. The induration and the ulceration increased. On the 27th November he was seen by Professor Boeck, who selected him as an excellent subject for syphilization. At this time the patient had roseola on one part of the body, and lichen on another. He was inoculated by Dr. Boeck on the arm, in two places, with matter taken from his own sore. He was also inoculated at the same time, on another part of the body, with matter taken from a soft chancre. The inoculations of the latter succeeded; those with the matter from the indurated chancre failed.

The sore on the penis was kept constantly dressed with savin

ointment, in order to excite suppuration, and two inoculations with the matter so produced were repeated daily. Inoculations were also made on the body every three days, from the pus produced by the last pustules from the soft chancre, and the patient was treated by syphilization, according to the rules laid down by Dr. Boeck.

I shall make no further allusion to his treatment, as my object is not to show the effect of syphilization, but to give the result, in this case, of repeated auto-inoculation with the matter of a hard chancre. These inoculations were repeated daily until December 19th, without producing any effect, when, according to my note-book, I find that one inoculation, made on the right arm, on the previous day, and one near it, made some days before, appear to have taken.

December 27th.—There were two distinct pustules on the right arm; I inoculated from these pustules the right arm in two places, and the left arm in two places. These four inoculations were successful.

June 5th, 1866.—I have this day seen C. D. again; and he informs me that he went, at my request, to the Female Lock Hospital, in the Harrow-road, two days before he had been selected by Professor Boeck, as a suitable subject for syphilization. On this occasion a female patient in the hospital, suffering from constitutional syphilis, was inoculated from C. D.'s sore; this inoculation was followed by a positive result, and C. D. himself was successfully inoculated on the left arm with matter taken from the pustules produced in the woman from his own sore.

Case 14.—Alfred G., aged 25, applied to the Lock Hospital, on the 1st December, 1865, with a superficial sore near the frænum. There was some thickening round its base, but not sufficient to mark it as specific induration. Under these circumstances, he was ordered simply a lead lotion. When seen on December 18th the induration round the sore was so well marked as to leave no doubt as to its character.

February 13th, 1866.—The induration still continues; and though water dressing has been applied for the last few days, the sore is secreting pus in small quantity. I made three inoculations on his right arm, with pus from the sore on his penis, using a perfectly clean cataract-needle for the purpose.

14th.—The inoculations made yesterday show distinctly three red marks. I made three fresh inoculations this morning, immediately above the others, using the same needle.

17th.—Three inoculations have been made daily up to this date with a negative result; they were repeated this morning.

18th.—One of the inoculations made on the 16th has apparently taken, a small pustule having formed on its site.

19th.—Two inoculations were made on the left arm, this afternoon, from the pustule on the right arm, in the presence of the house surgeon, of Mr. Antonini, and other gentlemen.

25th.—Both the last inoculations on the left arm have taken, and from one of the pustules two fresh inoculations have been made. These last were likewise successful, and gave rise to a fresh series of pustules, when inoculation was repeated.

In this case all element of doubt was removed. The needle employed was perfectly clean, and was never contaminated by any other matter. No irritant had been applied to the sore, which had been dressed three or four days before the commencement of the inoculation with water-dressing merely; the patient, moreover, was inoculated with matter taken from his own sore only, and he never had been submitted to inoculation with matter from a soft chancre, before or since.

These are the only two cases in which I have succeeded in auto-inoculating a patient with matter from a hard chancre. I had a patient under my charge about the same time as the one last mentioned, and I inoculated him daily for nearly five weeks—in fact, until the chancre had nearly healed, in spite of savin ointment—yet all these inoculations failed. I used a cataract-needle in this case likewise, and took care not to employ it for any other use.

Another example of failure occurred in one of my patients, whom I handed over to the care of Dr. Meredyth. This gentleman, at my request, made daily inoculations for more than five weeks, until, in fact, phymosis was produced, by the irritation of the savin ointment. None of the inoculations succeeded, and they were wisely discontinued, as the patient became dissatisfied; for he shrewdly suspected that the local syphilization did not accelerate the healing of the sore. This patient still (July, 1866) continues to attend the hospital, and is now suffering from secondary syphilis.*

Another curious point in the history of syphilization is the successive diminution of the series of ulcers, as they recede from the parent sore—becoming smaller and smaller, as the series is prolonged, until at last inoculation ceases to produce any effect whatever. The matter for these successive inoculations is always taken from the last-formed pustules.

The inoculations, as practised by Dr. Boeck, are commenced on one part of the body—say the trunk. When the series from the same virus fails, fresh matter is taken and

* *Lancet*, August 18th, 1866, p. 180.

employed on the same part (trunk) until no further effect is produced. The inoculations are then commenced on the arms, and continued until the result proves negative, as before.

Finally, the same process is applied to the thighs; and when these parts prove refractory, the syphilization of the patient is considered as being complete. In ordinary cases, from three to four months are required to attain this result.

The number of inoculations required to produce immunity appears to vary in different individuals; but certain circumstances have been observed to influence receptivity. Thus, febrile disturbance or the previous use of mercury appear to suspend or diminish the curative effects of syphilization, which it is assumed are obtained as soon as the patient becomes refractory to further inoculation. Dr. Boeck does not attach much importance to the actual number of inoculations required to produce immunity in any given case. The main point to be looked to is the time during which the inoculations are continued, and the interval between each. Immunity is obtained as quickly from one inoculation as from three; but it is more prudent to employ the latter number, because one or more of the points often fail to take. The average time of syphilization, in 252 cases recorded by Dr. Boeck, was 134 days.

The local history of the ulcers produced by inoculation requires some notice. There is no distinguishable difference between the sores arising from the matter of indurated or soft chancre. The artificial ulcers are soft; their duration is the same, varying from three to four weeks; and the scars which result present the same appearances. The average size of the ulcers is about half an inch; but in some cases they attain a larger size, and the pain accompanying them may be very severe. The scars produced are somewhat

similar to those which follow vaccination. They are permanent, or at least remain for many years. I have recently seen the patient whom I inoculated in November, 1865, and his body is still covered with cicatrices marking every point at which the ulcers had existed.

The therapeutic effects of syphilization have been variously explained. Dr. Boeck thinks that the continued introduction of the poison stimulates the syphilitic diathesis, and hastens the appearance of secondary or tertiary symptoms which would otherwise be dormant. The course of the disease is thus considerably shortened, and its manifestations rendered milder. Relapses are also less frequent. Dr. Watson and many other surgeons consider the effect to be merely one of revulsion, an opinion which seems to be supported by the results of *derivative* treatment with local irritants. The want of a good theory, however, must not shut our eyes to the conclusions derived from actual practice.

Syphilization received a friendly though limited trial in the years 1865–6, at the Lock Hospital, by the surgeons of that institution, to whom Dr. Boeck had been recommended. Mr. Lane and Mr. Gascoyen have published a joint report in the transactions of the Medico-Chirurgical Society.* Mr. Lane concludes "that syphilization does exert some beneficial and specific influence over the progress of the disease." Mr. Gascoyen attributes the effects observed, in the cases treated at the Lock Hospital, to the natural tendency to recovery, aided by the diet, rest, &c. He considers that syphilization produces no effect whatever on the disease or the system.

Without going so far as Mr. Gascoyen, I believe that his opinion is in the main well founded; it was, at least, fully borne out by the results of the cases treated at the

* Vol. i. p. 281.

Lock Hospital. Twenty-seven cases were submitted to the new treatment, from which we must deduct one, altogether refractory to inoculation. On examining these twenty-six cases, I find that no less than twelve were affected with roseola, seven with the mucous patch, and two with recent squamous eruptions about a month old. These twenty-one cases, then, were in the very first stage of constitutional syphilis; and I submit that no extraordinary means were required to obtain an apparent cure in periods varying between three and eight months.

In the remaining four cases, the disease was of three, five, six, and eighteen months' standing respectively. The latter was a bad tertiary case; it received no benefit from syphilization, but was improved by the iodide of potassium, with sarsaparilla. The secondary cases were squamous eruptions. The one of three months' standing was cured in six months, the case of five months' standing in five months, the case of six months' standing in four months; in this latter case, however, a relapse occurred in a short time, and was quickly cut short by the bichloride of mercury.

If the period of time required for cure be taken as a test of the value of any treatment, the numbers just given do not speak much in favour of syphilization. The following statistics from Dr. Boeck's valuable "Researches on Syphilis"* are interesting:—

PRIMARY ULCERS

With Mercury.

	Days.
Cases 1,083.—Mean duration of treatment . . .	$60\frac{8}{10}$

Without Mercury.

,, 626.—Mean duration	$37\frac{1}{6}$

* Christiania, 1862.

	Days.
With Mercury.	
Cases 3,123.—Mean duration of treatment . . .	126
Without Mercury.	
,, 283.—Mean duration	106
By Syphilization.	
,, 243.—Mean duration	143
By Derivation.	
,, 77.—Mean duration	184

The proportion of secondary symptoms after the different methods of treating the primary ulcer were as follows :—

	Secondary Symptoms.
With Mercury.	
Cases 1,083	24 per cent.
Without Mercury.	
,, 626	$14\frac{3}{5}$,,

The proportion of relapses was—

With Mercury.	
Cases 3,123.—Relapses 1,036	33 ,,
Without Mercury.	
,, 283.—Relapses 82	29 ,,
By Syphilization.	
,, 243.—Relapses 27	$11\frac{1}{9}$,,
By Derivation.	
,, 77.—Relapses 19	$24\frac{3}{7}$,,

The treatment by *derivation* requires some notice in connection with syphilization. In order to determine how far the cures obtained by syphilization were connected with the suppuration kept up by a large number of ulcers, Dr. Hjort instituted a considerable number of experiments. Tartar emetic was employed to convert the pustules into ulcers, and keep the latter constantly suppurating. The following results are furnished by Dr. Boeck.

Eighty-five cases of constitutional syphilis, on its first

outbreak, were treated with tartar emetic alone. The mean duration of treatment was 152 days. The proportion of relapses was twenty-four per cent. It was remarked that the tartar emetic did not produce the same series of constant symptoms as the chancrous virus; immunity was not at any time obtained, nor did the local action diminish in the same regular manner. Dr. Boeck considers these experiments as highly interesting, for they demonstrate that constitutional syphilis may be cured without specific remedies in a much greater number of cases than has hitherto been supposed. He has, however, less confidence in derivation than in syphilization, because he thinks that the former method has less power to prevent the subsequent appearance of tertiary accidents.

CHAPTER XX.

QUATERNARY OR VISCERAL PERIOD.

General Pathology of Syphilis—Gummy Tumour—The Fibro-nuclear Degeneration—Microscopic Characters of Gummy Deposits—Variations explained—The Amyloid Degeneration—Cerebral Syphilis—Its various Forms—Inflammation—White and Red Softening—Induration—Absorption of Gummy Tumours—General Diagnosis.

In the following chapter I do not profess to give more than a sketch of visceral syphilis, although it forms one of the most important Medico-Chirurgical subjects of the present day. The time has not yet arrived for treating this question in anything like a complete manner.

The shadow of a great name cast obscurity on it for more than half a century. Hunter affirmed that "the brain, heart, stomach, liver, and kidneys, have never been known to be affected with syphilis."

This doctrine of one whose word had become law amongst English practitioners prevented them from connecting affections of the viscera occurring during syphilis or after the disappearance of its external manifestations with the disease of which they really formed a part. When cases of visceral syphilis came before the surgeon, they were called pseudo-syphilis. When, as more frequently happened, they came under the notice of the physician, they were confounded with cases of visceral disease arising from non-specific causes,

and their clinical history has become inextricably mixed up by all our classical writers with the descriptions of disease such as it ordinarily presents itself in the deep-seated organs of the head, chest, and abdomen.

It is, therefore, of the utmost importance that all the various questions connected with the pathology and clinical history of visceral syphilis should be studied in a careful manner by competent observers. Much has been done within the last fifteen years; but a great deal still remains to be accomplished.

The pathological anatomy of visceral syphilis, thanks to the labours of Dittrich and Virchow in Germany, of Lebert and Gubler in France, of Wilks, Bristowe, Moxon, and many others in this country, has been carefully investigated, and may be said to be now almost completely made out. But the clinical history of the deep-seated affections is still very obscure, chiefly because their nature has not been sufficiently recognised; and their symptoms have been so confounded with those of ordinary analogous affections that any complete history of them is impossible in the present state of medical knowledge.

In the regular description of any disease, the natural method would be to give the symptoms first, and then describe those morbid appearances which repeated observation entitles us to connect with the symptoms. But, for the reasons just given, I shall pursue the reverse course.

GENERAL PATHOLOGY OF SYPHILIS.

The study of the pathology of deep-seated syphilis will be much aided by an observance of those changes which accompany the disease in the superficial parts of the body; for if there be anything specific or characteristic in the latter, it is

highly probable that the visceral lesions will present the same general characters which enable us to distinguish certain syphilitic affections of the skin and superficial organs. The seat of the lesion, and the structure of the parts by which it is surrounded, may modify to some extent its appearances, but analogy entitles us to conclude that the essential nature of the morbid change—if any such nature exist—will not be altered by accessory circumstances.

The superficial lesions of syphilis—that is to say, those morbid changes which are immediately accessible to the senses—may be distinguished into three kinds.

1.

Simple inflammation, with its results, or at least an inflammation which cannot be distinguished anatomically from common inflammation.

2.

Sub-cutaneous tubercles and gummy tumours.

3.

A peculiar degeneration, called by many pathologists fibro-plastic, by others gummy, but to which the name fibro-nuclear seems the most appropriate.

These different lesions are likewise discovered in the viscera of patients who have died while labouring under unmistakable symptoms of constitutional syphilis; and so far, we are entitled to conclude that the same effects arise from the same cause, provided we can show either a frequent coincidence, or that the effects are peculiar to syphilis, and are not produced by any other morbid condition.

This latter consideration leads us to the general pathological anatomy of syphilis. Has syphilis any special lesion? Are the appearances observed after death sufficient to determine the nature of the disease which existed during life? Has syphilis any specific product like scrofulous tubercle?

The importance of these questions is obvious, especially at the commencement of an investigation, from which all doubtful elements should be carefully eliminated. Considering the subject at the point to which it has up to the present moment been advanced, we shall, I think, act prudently in confining truly syphilitic lesions of the viscera to the gummy tumour and fibro-nuclear degeneration. How far the latter may depend on a low form of inflammatory action has not yet been determined.

The so-called gummy tumour is either hard or soft. The hard species is sometimes found underneath the skin or mucous membranes. Dittrich describes these tumours as rounded, irregular masses, of various sizes, and of a yellowish-grey colour, rather hard externally, but softish, granular, and unorganized internally. They are enclosed in a thick, whitish, fibrous envelope.

The deep gummy tumour, according to Virchow, is very similar to the deep-seated tubercle of congenital syphilis. When softened, the central part is found to consist of a viscid, tenacious mass, which the microscope shows to be composed of detritus and a great number of small, round cells, which have partially undergone the fatty degeneration. This species, and the fibro-nuclear degeneration, are found at a comparatively early period in the testicle, which may be regarded as an external viscus. The mode of development, and the histological characters of the gummy tumour, considered independently of the modifications produced by locality, have been carefully described by the same author.

The Berlin professor considers that the first change which takes place consists in hypertrophy of the interstitial cellular tissue; the cells become increased in size and in number. The further development proceeds in two different ways :—

1st. The cellular element predominates; the interstitial tissue rapidly becomes soft and gelatinous; the mass of the tumour melts down, as it were; pus is secreted, and ulceration ensues. This mode of development is seen in subcutaneous gummata.

2nd. In the second form the cellular element does not predominate; the hypertrophy of the cellular tissue is not well marked; the cells preserve the fusiform or stelliform characters of the connective tissue, or they assume the rounded form of granulation-cells; finally, they undergo the fatty degeneration, and in this stage form the dry, yellow tubercles of the deep-seated organs.

The microscopic characters of a recent gummy tumour (of the testicle, for example) are the following: The section presents three distinct zones. The external circle is composed of highly-injected and hypertrophied cellular tissue, filled with young cellular elements. The second zone is much narrower, and can seldom be distinguished by the naked eye. It is seen to be undergoing the fatty degeneration; the young cells are larger than in the external zone; they are transformed into granular, fatty globules, closely pressed against each other, and forming a kind of envelope to the central mass. This latter constitutes the third zone, and resembles the yellow substance found in gummy tumours of the periosteum. It is of a yellow colour and firm consistency, composed of a mass of cells undergoing the fatty degeneration, amongst which may be seen a few fibrous fasciculi.

The mass of the tumour thus formed is enclosed in a kind

of fibrous capsule, produced by the indurated tissues of the organ strongly adherent to its surface.

Budd has given an accurate histological description of these tumours in the liver, where the microscopic characters are essentially the same as those just described.

From the above notice it will be inferred that the gummy tumour of syphilis does not possess any specific elements properly so called. Yet it is specific in this sense, that it is peculiar to syphilis, and that it is distinguishable, as Lebert has well observed, from other morbid products by the special manner in which the elements composing it are arranged and grouped together. The same remark applies to the changes produced by diffused gummy degeneration.

The importance of an accurate knowledge concerning the intimate structure of the gummy tumour induces me to add some further particulars, upon which I dwell, because, in a great number of recently published cases, the nature of the disease has been inferred from its pathology alone.

Lebert thus describes the microscopic appearances of a gummy tumour taken from the scalp. Examination under the microscope disclosed the following characters: an open fibrous network, formed of pale, elastic fibres, leaving in their intervals large spaces filled with a granular homogeneous substance, the elementary constituents of which are much less adherent to each other than those of tubercle.

M. Robin considers the gummy tumour as being produced by the generation of cysto-blastions,* accompanied by an amorphous granular substance in greater or lesser quantity.

The pathological characters of these deep-seated lesions have also been carefully described by many English observers,

* The cysto-blastions are round nuclei contained in fibro-plastic cells.

amongst whom may be named Drs. Wilks, Bristowe, Moxon, and Hermann Webber. Their descriptions agree in all essential points with that given above. The lesion produced by syphilis is a degeneration rather than a growth, and has no tendency to end in suppuration when it is situated in the viscera. The appearances vary somewhat with the organ, and also according to the stage at which the degeneration has arrived;* but the general characters remain the same, even when the degeneration is diffused, instead of assuming the form of tumour. In the earlier stages the change is nuclear; as the degeneration advances we find the fibrous element predominating at the outer borders; here in certain organs fasciculi appear to shoot out into the surrounding tissues, become more dense as the change advances, and finally destroy the tissues which they envelope by a kind of strangulation.

In other cases the fibrous streaks take a longitudinal, rather than a radiating direction.† These differences probably depend on the arrangement of the elementary tissues composing the affected organ.

Before closing this account of the general pathology of syphilis, it is necessary to notice the lardaceous or amyloid degeneration of the viscera which is found to exist so

* The differences in the descriptions of the fibro-nuclear degeneration given by pathologists may be attributed to the fact that they apply to different stages of development. Scrofulous tubercle of the lung presents still more striking differences at its various stages, from the miliary granulation to the full-formed tubercle, then to the purulent cavern, and, finally, to the cretaceous degeneration.

† The histological appearances of the syphilitic degeneration are well illustrated by Dr. Bristowe in the nineteenth volume of the "Transactions of the Pathological Society." On comparing his plates with those given by Budd and Virchow, we see at once how closely they agree, and how clearly they demonstrate the peculiar arrangement of elements which constitutes the specific character of the syphilitic degeneration.

frequently in the bodies of patients cut off by visceral disease. It has, however, been clearly shown that the amyloid change is not peculiar to syphilis, but is an effect of a cachectic state of the system, produced by other diseases, such as scrofula, rickets, long-standing affections of the bones, and perhaps by the abuse of mercury. It is a cachectic sequela, and nothing else, more frequently produced by several other diseases than by syphilis. It is said to be an exudation, or deposit from the coats of the arteries; its histological characters are peculiar, and it never exists at a comparatively early stage of syphilis, as the lesions already described are often found to do. The latter I cannot consider as sequelæ, although the doctrine is supported by high authority. The conclusion is not borne out by the clinical history of the disease, nor by the results of *post-mortem* examination. We meet with unequivocal symptoms of visceral disease in patients still labouring under secondary manifestations; the external and internal lesions co-exist, are modified by the same treatment, and often disappear under it at the same time. On the other hand, the specific lesions have been discovered in various stages of development in the bodies of persons who have manifested no signs of cachexia, and at so early a period that a depraved state of nutrition cannot be supposed to have taken place.

That the latter may predispose to the occurrence of deep-seated lesions we can readily understand; but it is not so easy to see how lesions which are often the immediate and direct effects of syphilis should, at the same time, be considered as consecutive and indirect affections. On the whole, I think it may be concluded that the amylaceous degeneration is a sequela of syphilis, and that a peculiar lesion of the liver, to be presently noticed, may belong to the same category.

The special pathology of the different viscera, with

exception of the cranial, will be described summarily in future sections; for the present I shall content myself with directing attention to two characters in which they resemble the earlier manifestations of syphilis. They are widely diffused; the existence of a single deep-seated lesion is rare; much more commonly, if we find the special disease in one organ, we are sure to discover the same kind of lesion in other viscera. They are liable to relapse. This character cannot, of course, be demonstrated anatomically, but the results of treatment places its existence beyond doubt.

The deep-seated inflammations produced by syphilis are, as we have already seen, of two kinds—the simple and the specific. These two forms may exist together in the same organ, or independently of each other. As to their seat, they may occupy the parenchymatous substance of the organ, its lining membrane, or both substance and surface at the same time. In the substance of the organ, the disease is seated in the interstitial cellular tissue; and as it progresses, the elementary tissue of the organ, whether it be nervous, muscular, &c., may become destroyed, not by ulceration, suppuration, or absorption, but by a kind of atrophy which seems peculiar to syphilis.

PATHOLOGY OF CEREBRO-SPINAL SYPHILIS.

The pathology of cerebral syphilis is much better understood than its clinical history. But it is necessary that we should ascertain, as clearly as possible, what lesions of the nervous system syphilis is capable of producing, because, until this be done, it would be premature to infer the nature of the disease from its pathology. Syphilis may attack the brain in several ways:—

1. Caries, exostosis, or gummy tumour of the skull, may cause ordinary inflammation of the dura mater, commencing at limited points, and thence extending to the arachnoid, pia mater, and surface of hemispheres.

2. The internal or external surfaces of the dura mater may be the seat of gummy deposit also followed by inflammation.

3. The nervous substance may be the seat of gummy deposit followed by softening.

4. We may have inflammatory or white softening, the latter being possibly connected with obstructed circulation.

5. Meningitis. Further researches are required to establish the connection between syphilis and simple inflammation of the pia mater. A gummy tumour, like a tubercle, might of course give rise to direct inflammation of the vascular membrane; but the existence of such a case has not yet been clearly shown.

It is thus seen that the brain may be affected either directly or indirectly by syphilis.

The lesions which act indirectly do not require any detailed notice. They are caries, necrosis, and exostosis of the cranial bones, or deposits in the dura mater, which represents an internal periosteum. Inflammation excited by these lesions occasions adhesion between the dura mater and the surface of the arachnoid, either at limited points or more extensively. Similar adhesions are rarely produced by any other cause except external violence. Another circumstance worthy of notice is, that as the lesions of the osseous system more commonly occupy the anterior part of the cranium, so do the nervous symptoms connected with them frequently indicate disorder of the cerebral nerves.

Some cases are recorded which show that white and red softening of the cerebral substance are caused by syphilis.

The lesion has generally been found in the anterior lobes, and in two cases it was very extensive.

White softening of the brain has also been connected with arterial obstruction produced by clot in the vessel, by pressure from a tumour, or by degeneration of the walls of the artery. Dr. Moxon has described a case which illustrates this latter cause of softening: "the middle cerebral artery had a thick, yellow patch on its wall."*

Essmark gives the history of a patient affected with madness who presented various other symptoms of cerebral disease, as paralysis of the motor communis, amaurosis, deafness, &c.: the deep cerebral artery of the left side was blocked up with a fibrinous clot, and the surrounding nervous tissue was softened.

In other cases, related by Virchow, Dittrich, Bedel, and Gildemeester, obliteration of the middle or other cerebral arteries, with softening of the brain tissue, was produced by the pressure of a gummy tumour.

These cases are all interesting, and are worthy of notice, as coming from competent observers; but in the present state of our knowledge, and awaiting further researches, it will be prudent if we restrict the action of syphilis on the brain to the deposit of gummy matter, and to the secondary effects of this deposit on the surrounding nerve-tissue. The value of this lesion as a characteristic pathological sign is greatly increased by the circumstance that the gummy tumour, like scrofulous tubercle, is seldom confined to a single part of the body. If it exists in one organ, we are almost sure to find traces of it elsewhere. We have a cachectic product, and not an isolated lesion, to deal with.

The deposit may exist in a diffused form, or as tumour, and it has been found in various stages of degeneration.

* "Guy's Hospital Reports," vol. xiii., 1868, p. 333.

In some cases, the nature of which has not yet been clearly established, the exudation is diffused over a considerable portion of the brain, and is so mixed up with the altered cerebral tissue as to give it the appearance of induration. Examples of this syphilitic sclerosis have come under the observation of Virchow and a few others. Virchow, however, suspends his judgment concerning the nature of this affection.

M. Robin has given a careful description of this lesion, drawn up for the Parisian Hospital Society :—

"The cerebral tissue was resistant and elastic, giving in a slight degree the sensation as if one pressed a bit of India-rubber. It was manifestly harder than the normal tissue.

"The microscope showed that the amorphous matter of the grey substance was much more granular than natural, and that the granules were larger. Induration was most evident in the tissue thus altered, which likewise contained an increased quantity of myocysts. The cylindrical axes and tubes had disappeared, as well as the cellules. They seemed to have been replaced by a multiplicity of those ovoid nuclei called fibro-plastic, and by cellular fibres. The latter were very fine, not collected into bundles, but dispersed throughout the grey amorphous matter."*

The most frequent effect, however, of the diffused exudation is softening, as shown in the cases recorded by Dr. Moxon and many other pathologists.

The gummy deposit, in the great majority of cases, appears to assume the form of tumour. The size varies considerably in different cases, from that of a granulation, to a pea, nut, or even an egg. The characters of the tumour vary according to its degree of development—the deposit being sometimes firm, at other times soft in the centre, at others

* Bul. de la Soc. Med. des Hôpit., tome iv., p. 33.

almost cretaceous. It is not, therefore, safe to depend on the external and visible characters alone. In a case presented to the Anatomical Society of Paris, which had been regarded as syphilitic during life, nearly all the members present declared the lesion to be cancerous. The specimen was referred to M. Robin for examination, who discovered in it the special characters of a typical gummy tumour.

The general characters of this tumour are the same in the brain as elsewhere—nuclear in the centre and fibrous towards the circumference. When the nuclear element, accompanied by fatty degeneration, prevails, the interior portion of the tumour presents a cheesy consistence, and is of a yellow colour. In other cases, the centre is soft and gelatinous. The external surface of the tumour is more or less fibrous; but the radiating fibres, which in other organs give rise to atrophy, have not been found in the brain. It is not, however, necessary to enter into any minute description of the cerebral deposit; all eminent pathologists unite in declaring that it presents the same characters as those which I have detailed in a former part of this work, in the section devoted to General Pathology, the differences in different cases probably depending on the various degrees of development or retrocession.

M. Lebert has given the description of a gummy tumour which appears to have retrograded, as we know the superficial tubercle frequently does.

The tumour, about the size of a small nut, was enclosed in a regular envelope closely adherent to it; the mass was marked by a few vessels, and near its base presented a cretaceous induration. The tumour was soft and elastic, of a pale-yellow colour externally; on dividing it through the middle, it was found to be solid, compact, and elastic, but of a paler colour than externally. The microscope showed the envelope to be composed of a cellular network traversed by

blood-vessels. The interior was composed of an opaque granulated mass, which boiling alcohol did not affect, but which effervesced and became almost transparent when treated with hydrochloric acid; the tissue then appeared to be entirely composed of large and small globules. The base contained several brilliant pellicles, which the microscope showed to be crystals of colesterine. It is probable that this was an old gummy tumour partially calcareous.

In referring to this structure, M. Lebert points out the difference between the gummy and scrofulous deposits.

Scrofulous tubercle is formed of larger globules, which are angular, polyhedric, and united by a hyaline intermediate substance, while the gummy tumour noticed above was reduced to a transparent tissue, the globules of which were much smaller than those of scrofulous tubercle.

It would be an interesting and practical point to determine what becomes of these gummy tumours in cases where, from the disappearance of all cerebral symptoms, we might reasonably infer that the material lesion had likewise subsided. Is the gummy tumour capable of being absorbed? If we reason from analogy, this question will be answered affirmatively. Take a case in point. A patient is affected with subcutaneous gummata; he likewise labours under severe cerebral symptoms indicating the presence of some tumour in the brain. A specific treatment is employed; the subcutaneous tumours gradually disappear; the cerebral symptoms gradually decline; the patient is finally cured. In any other disease except syphilis, the identity of effects would lead to the inference of a similarity of causes; but whether the syphilitic tumour becomes quiescent, or disappears entirely, it is as yet impossible to say.

The only case bearing on the subject is one related by Ricord.

CASE 15.—A man, thirty-seven years of age, had gone through the various stages of secondary syphilis. He was subsequently attacked with symptoms indicating cerebral disease, such as paralysis of the motor communis and hemiplegia. Mental disorder then ensued: the memory got weak, and the man finally became quite mad. No trace of lesion about the cranium could be discovered, nor did the patient appear to suffer from headache. The iodide was given, and the dose rapidly increased to two drachms daily. In two months the patient had entirely recovered his reason; the paralytic symptoms gradually disappeared, and soon afterwards the patient appeared to be perfectly cured, although still thin and extremely feeble. Six weeks afterwards he was cut off by cholera. The cranium and brain were examined with the utmost minuteness, but no trace of disease could be detected. M. Ricord, therefore, says "it is rational to admit that some gummy tumour or plastic tubercle had existed," and entirely disappeared.*

In the above case, the existence of a gummy tumour and its disappearance under treatment are merely rational conjectures. In another, which, so far as I know, is unique, the exact condition of the quiescent gummy tumour was ascertained after death. A patient died of epileptic hemiplegia, preceded by amaurosis and paralysis of the sixth and seventh nerves. Five deep, round cicatrices marked the points where gummy ulcers had existed on the sternum and leg. Two gummy tumours were discovered in the brain—one in the pons, the other in one of the thalami. Under each of the old gummy scars was found a hard, concrete tumour, not enclosed in a cyst; they varied in size from that of a French bean to a small walnut. The surface of the tumours was irregular. On cutting into them, the interior presented a light-yellow colour, the section being granulated, and the consistency resembling that of a mass of fat. There was no trace of scrofulous tubercular deposit in the lungs.†

It is to be hoped that further researches may clear up this

* Icon., l. c., pl. 39.

† Zambaco, des Affect. Nerv. Syphilit., Baillière, Paris, 1862, p. 492.

interesting and important point connected with the pathology of syphilis. It will be remembered that, in one case which I have noticed, a commencement of cretaceous degeneration was found in a cerebral tumour of syphilitic origin. Is the gummy tumour, like scrofulous tubercle, capable of being reduced to a quiescent state by becoming cretaceous?

Spinal Chord.—The pathological anatomy of spinal syphilis has not yet been clearly made out. This may be explained by the facts that the nature of the affection has been discovered, in a great majority of cases, at an early period, and that the disease, having been treated by specifics, has been cured.

That spinal meningitis has existed in some cases may be inferred from the symptoms observed during life. In one of the cases, from my own practice, which I have related, several of the symptoms were plainly connected with incipient inflammation of the membranes lining the chord.

Spinal exostosis has been included by many authors amongst the lesions which may give rise to paraplegia; but their opinion is not supported by facts, and seems to be rather based on analogy from what occurs in the cavity of the cranium. I can find only one unequivocal case of exostosis on record; besides, on examining patients labouring under syphilitic paraplegia, we do not discover any of those symptoms which usually indicate the existence of exostosis. The patients do not complain of severe pain confined to a particular part of the spine, and exasperated during the night as osteocopic pains usually are; nor do we often find exostosis in other parts of the osseous system in patients affected with paralysis of the lower extremities.

The pathological changes in the chord connected with syphilis are, so far as we know at present, confined to the deposit of gummy matter either in the form of tumour or

exudation. Both of these changes have been discovered in some of the few cases of paraplegia which have terminated fatally.

The gummy tumour of the spinal chord does not present any peculiar characters which require notice. The effusion, in a case related by M. Zambaco, consisted in a copious gummy exudation, which compressed the chord along the lower dorsal and the whole of the lumbar regions. Dr. Moxon has published * a case of imperfect paraplegia produced by caries of the vertebræ and purulent effusion into the spinal canal. There was no direct history of syphilis, and the nature of the spinal affection does not seem to have been suspected during life; but the morbid changes discovered after death leave no doubt as to the specific nature of the disease. During life, angular curvature of the spine, with abscess, was discovered, and the legs were weak, but with no loss of sensation or motion. Besides a carious condition of several of the vertebræ, "the spinal canal had purulent lymph in all its spaces."

Patients afflicted with syphilitic paraplegia struggle against the disease for a long time, especially when nature has been assisted by an appropriate treatment. The initial lesion, therefore, whatever it may be, acts for a lengthened period on the chord, and finally determines extensive softening of its substance.

General Diagnosis.—By the term general diagnosis I mean one founded on those general characters from which the specific *nature* of the disease may be inferred. I have already mentioned how, for many years, practitioners influenced by the authority of Hunter believed that the effects of syphilis did not extend beyond the "third order" of parts, that is, beyond the osseous and fibrous systems.

* L. c., p. 341.

The modern doctrine universally admitted by reflecting observers, and gaining ground daily, maintains that the internal organs likewise are affected by syphilis—that the brain and nerves, the respiratory organs, the principal viscera of the abdomen, are attacked by disorders which are not accidental complications of the constitutional disease, but form part and parcel of it. The demonstration of this fact is mainly due to the labours of modern pathologists.

The practitioner, however, cannot remain content with a knowledge of *post-mortem* appearances. His chief object must be to detect disease during life, and to discover its nature, in order to treat it successfully.

The first question, then, that presents itself, in connection with visceral affections which occur in persons who are, or who have recently been, suffering under constitutional syphilis, relates to the *nature* of the deep-seated disease. Is it syphilitic, or is it an ordinary affection occurring as a complication of the specific complaint? This question leads us to the general diagnosis of visceral syphilis, which may be considered here, because, in the present state of our knowledge, it is impossible to determine positively the nature of the internal affection from the symptoms which accompany it.

The latter derive their principal characters from the altered functions of the organs attacked; and the clinical history of internal syphilis has not yet been so far advanced as to enable us to discover any special characters in the symptoms or course of the several affections which are sufficient to reveal the source whence they are derived. Yet, if this has been effected for scrofula, it may also be effected for syphilis; and each advance that we make in the clinical history of the disease will probably lead us nearer to this desirable result.

If, then, we have not yet arrived at the knowledge of any objective or subjective signs peculiar to the several forms of visceral syphilis, we must found our diagnosis of the nature of the affections on other circumstances.

The chief of these are the period of evolution, the history of the case, the co-existing lesions, the results of treatment, which furnish a sum-total of proofs as convincing as any that we obtain for other internal diseases depending on a constitutional taint.

In addition to these general circumstances, we must avail ourselves of any special indications derived from the progress of the symptoms and the manner in which they are grouped together. Our knowledge upon these points is as yet limited, but it cannot fail to progress as soon as practitioners are fully convinced of the fact that constitutional syphilis is a fruitful source of certain visceral diseases.

The time and order according to which the deep-seated affections occur are not to be overlooked. They constitute a quaternary period, manifesting themselves, as a general rule, after lesions of the osseous system, although, for the nervous system at least, many exceptions to this rule occur. Hence visceral disease, setting in at a very early period, or long after the disappearance of tertiary symptoms, should not be regarded as specific without further proof.

On the other hand, when the disease manifests itself during its normal period of evolution, the history of the case and the co-existing lesions are sufficient to render our diagnosis "ready made."

But, with regard to history, we should bear in mind the essential difference which exists between the two species of chancre, for in many of the cases reported the previous existence of syphilis has been inferred from the presence of soft chancre and suppurating bubo. The old doctrine

respecting the origin of syphilis renders a great part of the old observations useless for the purposes of diagnosis.

It is unnecessary to dwell on the value of the sign drawn from the presence of co-existing syphilitic lesions.

As visceral syphilis ordinarily manifests itself several years after the primary lesion, and when the external disorders have nearly completed their course, the co-existing lesions to be sought for are those of the tertiary period. The experienced practitioner will know where to look for these signs, and how to detect them. A single lesion of this kind —nay, more, a single symptom pointing to such lesion—has been sufficient to place the observant physician in the right path, and lead to beneficial results.

Several examples of this kind are on record. Sometimes the external lesion makes its appearance during the course of the deep-seated affection, the nature of which had been previously mistaken.

The following case is an example :—

Case 16.—A gentleman, thirty-five years of age, occupying a high official position, was suddenly seized with an epileptic attack, which was repeated at various intervals of from two to three weeks. He consulted M. Cloquet, who attended him for some months, and endeavoured to arrest the attacks with various antispasmodics, valerian, assafœtida, &c. No benefit whatever resulted. The patient was now seized with slight febrile symptoms, which continued for three days, and were followed by the appearance of two periosteal tumours on the bones of the head. The nature of the disease was now immediately suspected. The bichloride of mercury, with sarsaparilla, was ordered. Under this treatment the patient was completely cured, and continued well for fifteen years, the period at which he was last seen.*

In another case, a single tubercle about the size of a nut, seated in the tongue, was the only external symptom of syphilis in a patient affected with epilepsy who had undergone the usual treatment without any effect. As soon as the

* Gros and Lancereau, l. c., p. 508.

presence of the tubercle was discovered, bichloride of mercury, with sarsaparilla, was employed. The tubercle gradually subsided, and disappeared in three months; the nervous disorder followed the same course; the epileptic attacks became less violent, appeared at longer intervals, and finally subsided altogether, a complete cure being the result.

M. Bazin has cited a case which also illustrates the aid to be derived from the presence of a slight external manifestation.

Case 17.—A patient was admitted into the Hospital St. Antoine, affected with albuminous nephritis. The case was treated as one dependent on scrofula, for the general symptoms seemed to point to a scrofulous taint; but no benefit ensued. At last, an enlargement of the clavicle was discovered, the bi-iodide of mercury was administered, and the patient rapidly cured.

The following case, related by Trousseau,* shows how the right interpretation of a single symptom may lead to a discovery of the nature of the disease :—

Case 18.—A gentleman was one evening, for the first time in his life, seized with epilepsy whilst at the British Embassy. Shortly after this he had a second attack, and on one occasion, whilst riding in the Champs Elysées, he fell from his horse in a fit, and severely injured his head. He consulted Dupuytren, who prescribed, but without success, the remedies vaunted against epilepsy. He then placed himself under the care of Dr. Lebreton, who, on carefully inquiring into the previous history, ascertained that he had suffered from violent and chiefly nocturnal headache. I was then asked to meet Dr. Lebreton in consultation, and we made out that the pain was almost exclusively limited to one side of the head. The periodical recurrence of the headache, and its nocturnal exacerbation, pointed clearly to syphilis; and, indeed, we ascertained on inquiry that the patient had had a venereal affection five or six years previously, to which he never paid attention. Suspecting then an intracranial exostosis or a syphilitic tumour, we recommended a treatment chiefly consisting in the use of the bichloride of mercury. The symptoms disappeared completely from that time, and a radical cure was obtained.

* "Clinical Lectures," by Dr. Bazire, vol. i., p. 92.

In doubtful cases, the diagnosis of visceral syphilis will be aided by the results of treatment. These are often truly remarkable, and it would be difficult to find any examples equal to them in the history of medicine. A patient labouring under nodes, subcutaneous tubercles, or deep ulcers of the throat, &c., is seized with symptoms indicating disease of some important organ. A specific treatment is employed, and the internal as well as the external symptoms are removed. Here we have no difficulty in admitting that the disease was one and the same in both orders of parts.

Another patient, presenting the same symptoms of internal disease, but no external manifestations of syphilis, is submitted to the same specific treatment which effected a cure in the former case. He likewise is cured in a rapid manner; and we are entitled to conclude that, as the same symptoms behave in the same way under the same treatment, they derive their origin from a common cause.

This inference will be strengthened by the circumstance that the patient may have already been submitted to ordinary treatment without any benefit whatever. In doubtful cases, then, the specific treatment should be adopted, and if it produce any marked amelioration, we have a diagnostic sign of considerable value, and a great encouragement to hope that the case may terminate favourably.

The multiplicity of disorders produced by syphilis will also afford an useful element of general diagnosis in several cases. Like some other constitutional affections, it has a tendency to infect many organs at the same time, or in succession. We have seen how this occurs in external parts of the body. The same law prevails, though perhaps in a lesser degree, for internal organs. Pathological anatomy demonstrates that when the liver is the seat of syphilitic disease, other organs are likewise affected. In diseases of the nervous

system, convulsive and paralytic symptoms are frequently mixed up together, or attended by irregular disorders of the mental faculties. The paralysis of a single nerve is often the forerunner of serious disease in the nervous centres. This character of multiplicity will be further illustrated under the title of disorders of the nervous system, to which it more especially belongs.

CHAPTER XXI.

MUSCULAR SYPHILIS.

Syphilitic Affections of Muscles—Gummy Tumours—Disease of Tendons—Affection of Corpus Cavernosum—Heart—Illustrative Cases.

Syphilitic affections of the muscles have been described by several writers—Ricord, Robert, Virchow, Bouisson, &c.

They consist either in simple permanent contraction of the muscle, without any appreciable lesion, or in the development of gummy matter between the muscular fibres, giving rise to atrophy of the muscle.

The simple form is very rare. In the single case observed by M. Robert, the affection was symmetrical; both biceps muscles were involved; the patient was unable to extend the arms completely; any attempt at forcible extension excited severe pain. No appreciable lesion of the muscles or their tendons could be discovered. As the patient was affected with psoriasis and iritis, an appropriate treatment was adopted, and the muscular affection rapidly disappeared. Virchow, however, attributes this form of muscular syphilis to an alteration analogous to that produced by rheumatism: an adventitious conjunctive tissue is developed between the muscular fibres; it becomes dense, causes atrophy of the fibres, and finally destroys them.

The second form has been found to affect a great variety of muscles—the flexors in a great majority of cases, though not exclusively, and those of the lower extremity more frequently than others. This form has been traced to the development of gummy tumours between the muscular fibres. Their size is various, from that of a filbert to a walnut. They are round, not adherent to the skin, painless, and are developed in a slow manner. A careful examination will often enable the surgeon to detect these tumours, as they are seldom deeply seated. On extending the limb, they become fixed, and if at all large excite severe pain. When in the neighbourhood of a nerve, they may give rise to severe neuralgic pains or other nervous disorders, and partial paralysis. M. Zambaco relates a case of syphilitic tumour in the biceps which compressed the ulnar nerve, and gave rise to partial paralysis of the two last fingers, together with numbness of the whole limb. The ordinary effect of these tumours is retraction, followed by atrophy of the muscular fibres; and if the latter has made any progress, the lesion is irremediable.

The tendons of muscles are sometimes the seat of the fibro-nuclear degeneration and gummy deposits. The tendon of the sterno-cleido-mastoid muscle, near its external insertion, is the favourite seat of this affection. The symptoms observed are more or less impediment to those motions which bring the muscle into action, or permanent contraction.

In connection with this part of the subject, we may notice that the fibrous sheath of the corpus cavernosum may be the seat of an analogous affection, which produces a very distressing effect on the sexual organ, sometimes indeed making it describe a complete circle when erection takes place. M. Ricord and other surgeons have observed cases of this kind. M. Bazin was in the habit of mentioning in his lectures a

curious example of a similar kind. An old gentleman, eighty years of age, was attacked by this affection thirty years after secondary symptoms. He was rapidly cured by the bi-iodide of mercury.

HEART.

Admitting, as we must, that the blood is the vehicle through which the poison of syphilis is conveyed to all parts of the body, it would seem natural to conclude that the heart should be frequently affected. Yet such is not the case, so far at least as its muscular structure is concerned. The number of cases in which the specific deposit has been found in the walls of the heart is extremely few. One of the earliest has been related by M. Ricord.

CASE 19.—The patient, who had been affected with tubercular ulcers on the skin, died suddenly. On examining the body after death, the following alterations were found in the heart:—The organ was hypertrophied; the internal lining membrane of the right ventricle was thickened, of dull-white colour, and fibrous consistence. At several points in the walls of the ventricles there existed small, round tumours, some soft, others hard, and exactly similar to subcutaneous tubercles. The muscular tissue surrounding several of the tumours was softened and degenerated. Similar tumours were discovered at the base of the lungs.

Two cases related to Robert by M. Gubler may also be noticed. A woman presenting several tertiary symptoms was treated with the iodide of potassium. She improved rapidly, but was suddenly cut off by rupture of the aorta, attributed by Gubler to syphilitic degeneration of the aortic walls. In the second case, the heart was hypertrophied; the pericardium presented several whitish spots in its substance; several points in the substance of the ventricles were of a yellowish colour, and on examining them under the microscope, Gubler found the muscular fibres infiltrated with

innumerable molecular granules, apparently of an albumenoid or fibrinous nature.

The patient had a node on the tibia, from which circumstance, and from the microscopic characters of the cardiac lesion, Gubler pronounced the latter to be syphilitic.

CASE 20.—Lebert examined the body of a female affected with tertiary syphilis—viz., subcutaneous tubercles, caries of the frontal bone, and ulceration of the pharynx. The only cardiac symptom which appears to have attracted attention during life was a bruit coinciding with the first sound. The walls of the right ventricle contained several small tumours; the lining membrane over them being thickened, vascular, and spotted with a yellow colour. The tumours were elastic, and of a pale yellow; they contained a small quantity of fluid. On examining them under the microscope, they were found to consist of innumerable minute cellules collected into a spherical shape, and surrounded by a semi-transparent substance; this latter was finely granulated, and mixed with a quantity of fibro-plastic corpuscles.

The case reported by Virchow is detailed at great length, and accompanied by plates. It affords a good illustration of the extent to which the lesions of visceral syphilis may be carried.

Disease of Heart—Gummy Deposit below Tricuspid Valve—Endo-carditis — Atrophy of Muscular Fibres — Cicatrices in Lungs — Nutmeg Liver—Atrophy of Testicle.

CASE 21.—The patient, forty-seven years of age, was admitted into the Hospital of La Charité, Berlin, on the 14th of May, 1858. He remembered having had a chancre thirteen years previously, that his breathing had been very difficult, and his legs somewhat œdematous. His actual condition was that of a man dying from advanced disease of the heart. The organ was hypertrophied; the face, neck, and limbs were livid; the breathing greatly oppressed; sputa streaked with blood. He died on the third day after admission.

The brain appeared to be healthy. Considerable hypertrophy of the heart, especially on the left side. The pericardium presented signs of old and recent inflammation at several points.

Below the root of the large vessels it was marked by large spots of a fibrous appearance; near the apex the lesion was more recent, and

formed by vascular, soft deposits of organized lymph, adherent to the surface of the membrane, which was here very much thickened over an extent of two inches. The right side of the heart was filled with clots, which extended for some distance into the veins.

Underneath the tricuspid valve, and in the walls of the right ventricle, was seen a triangular space, about one-and-a-half inches long, occupied by a white, dense, mammillated substance. This contained several gummy tumours, lying immediately underneath the thickened endocardium, and surrounded by muscular fibres, which had undergone to the depth of nearly half an inch a complete fatty degeneration.

The left ventricle was dilated and hypertrophied; the endocardium, near the apex, was thickened and dense. The two papillary muscular bands of the mitral valves were completely degenerated, reduced to two flat, dense chords, resembling cicatricial tissue. Nearly the whole surface of the lining membrane of the ventricle presented signs of inflammation. It was of a dull, yellowish-white colour, irregularly thickened and mammillated; a fibrinous deposit existed at one point. Immediately underneath these inflamed portions of the membrane the muscular tissue had disappeared; it was replaced by a soft, vascular tissue of new formation. It contained several small tubercular bodies, some flattened, others round, of a pale-yellow colour, dry, hard, and caseous.

Examination of the different parts under the microscope furnished the following results:—At all those points which were hard, tendinous, and cicatricial, the muscular fibre had completely disappeared; it was replaced by adventitious cellular tissue. The peculiar arrangement of the cells was very remarkable. In some places they were round, and were arranged in regular series, like strings of pearls. In other places the series were arranged like ranges of paving-stones. As they approached the yellow tubercular masses, they were seen to become transformed into large fatty granulations or globules.

The substance of the solid tubercular mass did not present the same structure at all points of its interior. The dense, yellow portions were homogeneous, containing some fatty cells, or fatty granulations. At other points of the mass the *débris* of muscular fibres was seen, or the muscular tissue had undergone a peculiar change. The elementary fibre was reduced in size; its interior was finely granulated, sometimes fatty, sometimes albuminous; the transverse striæ were no longer visible, and their nuclei barely so.

Lungs.—The left lung adhered firmly to the pleura at several points. At the summit were found several old, puckered cicatrices. A large cicatrix of the same kind was found in the inferior lobe of the lung.

Abdomen.—Numerous cicatrices of the mesentery, attached along the sigmoid and descending portions of the colon.

Liver, enlarged and heavy; its surface of a grey colour, and slightly granulated. The left lobe, when cut into, presented a nutmeg appearance, red points alternating with tumefied white points. In this lobe, also, was found a small, round, lobular tumour (partial glandular hypertrophy).

Spleen, extensively hypertrophied, the capsule somewhat thickened, the pulp pale, the parenchyma friable, the follicles small.

Kidneys, voluminous and dense, but substance not diseased.

Testicles.—The tunica albuginea was closely adherent to the left testicle. The latter was small and hard; the parenchymatous tissue was entirely transformed into a white, firm mass, through which was disseminated a great number of hard, dry, yellow caseous bodies, about the size of peas. Similar bodies were found in the tunica albuginea. The root of the spermatic chord was likewise indurated, and the external surface dotted with caseous tubercles not larger than pin-heads. Right testicle also adherent to tunica vaginalis; enlarged; the proper tissue of the organ preserved throughout the greater part, of a brown colour, and in certain parts transformed into a greyish homogeneous mass.

This remarkable case, taken in conjunction with those of Ricord and Lebert, completes the pathological history of cardiac syphilis. In M. Lebert's case, we find the first stage of the lesion—hypertrophy of the inter-muscular cellular tissue, which is vascular, organized, and contains numerous fusiform cells. In M. Ricord's case, the disease has advanced a stage further. The gummy tumour was developed in some parts, but in others inflammatory action had been set up, and partially followed by transformation of the tissue into gummy matter not completely formed. In Virchow's case, the specific lesions had acquired their complete degree of development, not only in the heart, but in several other organs.

CHAPTER XXII.

NERVOUS SYSTEM.

Classification—Periods of Evolution—Affections of Single Nerves—Neuralgia—Effects of Specific Treatment—Illustrative Cases—Affections of Brain—Hemiplegia—Diffused Paralysis—Paraplegia.

Syphilitic affections of the nervous system may be divided, clinically speaking, into four classes :—

1. The paralytic.
2. The convulsive.
3. Affections of single nerves.
4. Mental disorders.

Paralytic affections include hemiplegia, paraplegia, general or partial paralysis.

The convulsive disorders comprehend epilepsy and partial convulsions.

Affections of the nerves manifest themselves by neuralgia, and impairment of sensibility or motion in the parts to which the nerves are distributed.

Syphilitic diseases of the nervous system are thus seen to assume the same forms as those presented by ordinary nervous affections. They depend on analogous, yet not identical, alterations of tissue; the general symptoms are very similar, for, as it has frequently been observed, the symptoms are the same for the same part, whatever the nature of the morbid

change in the part may be. Yet it may be remarked that the symptoms, taken at any given moment, do not constitute the disease clinically; their order of evolution, the manner in which they are grouped together, their progress as compared to other analogous affections, may give a special character to a chain of symptoms produced by a special lesion. Some of these characters have already been determined for syphilitic affections of the nervous system; and it is towards extending our knowledge in this direction that the attention of clinical observers should be mainly directed.

When describing the syphilitic exanthemata, it was shown how, during the early period of constitutional syphilis, the different kinds of eruptions succeed each other in a very regular order.

Syphilitic affections of the nervous system also present a certain order as to their periods of evolution.

We have generally been led to believe that nervous affections are amongst the latest signs of the constitutional disease; but this latter is attended, in a greater majority of cases, and at a very early period, by rheumatoid pains of the muscles and joints, which cannot be traced to any material lesion, and may possibly depend on functional disorder of the nerves from infection of the blood.

The shifting character of these pains, and the number of parts to which they extend, point towards functional derangement as their cause; and it is worthy of remark, that they are greatly under the influence of the iodide of potassium.

Coming next in order of succession, we find neuralgic or paralytic affections of certain single nerves. Paralysis of the facial nerve is the most frequent, and by far the most characteristic of these early nervous affections; it has been observed during the first month, coinciding with roseola, the

mucous patch, and other early manifestations of syphilis. Its occurrence as a late symptom, when it might be attributed to cerebral disease, is very rare. We possess, however, with regard to this particular nerve, a means of distinguishing whether the paralysis depends on disease within the cranium or not. In cases depending on cerebral disease, the velum pendulum, which receives its nerve from a branch sent off in the aqueduct of Fallopius, will be paralyzed also. When the velum is drawn aside, the lesion is intra-cranial.

I should have mentioned that, in some cases, paralysis of the facial nerve depends on pressure exercised by a tumefied ganglion; and in such cases the nervous disorder occurs at a very early period, in conjunction with erythematous or papular eruptions. Neuralgia of the fifth pair also belongs to this period.

Following the above in order of succession, and appearing about the time of transition between the secondary and tertiary periods, we also find partial paralysis of the muscles of the eye, often attended by impairment or loss of vision; likewise imperfect hemiplegia. These early and partial affections of the nervous system present certain characters which are worthy of attention. They come on rapidly; they are confined to the nerves in which they first appeared; they do not extend to other parts, and are seldom accompanied by cerebral symptoms.

The fourth order of nervous diseases is usually an indirect effect of syphilis. It occurs in the full season of the tertiary period, and can frequently be traced to some organic lesion of the osseous or fibrous systems. Epileptic hemiplegia is a form which the disease often assumes at this time, likewise hemiplegia, paralysis of certain cerebral nerves, and a mixture of paralytic with convulsive affections in various degrees.

Latest in order of evolution come those obscure affections

which we suppose to be connected more particularly with gummy tumours or the fibro-nuclear degeneration. They constitute those confirmed cases of hemiplegia, paraplegia, or mental aberration, the nature of which is the more readily mistaken that they are not often attended by any co-existing signs of constitutional syphilis; and at this period also occur certain affections of the eye, which were formerly considered as functional or depending on cerebral disease, but which the ophthalmoscope shows to be produced by organic lesions of the retina and choroid.

Nerves.—It is now well ascertained that affections of single nerves, formerly attributed to ordinary causes, frequently derive their origin from syphilis. It may at first sight seem strange that the action of a constitutional disease should be thus limited to a single nervous chord; but we should remember how a single bulla or a single node may be the only manifestation of external syphilis. Besides which, the nervous affections of which we now speak are generally the *indirect* effects of lesions seated in neighbouring parts, and giving rise to neuralgia through irritation, or to paralysis through compression. These latter circumstances explain why affections of certain nerves are much more frequent than others, and therefore more characteristic of syphilis.

During the tertiary period of the constitutional disease, the osseous and fibrous systems are frequently the seat of inflammation, accompanied by tumefaction of bone or periosteum. Hence, those nerves which traverse osseous or fibro-osseous canals are more exposed than others to the effects of irritation and compression. Illustrations of this indirect influence in the production of localized nervous affections abound. Tertiary disease of the maxillary and malar bones has often been noted in connection with severe neuralgia

of the fifth nerve. Facial paralysis has frequently been traced to disease of the petrous portion of the temporal bone, and when the lesion extends to those points traversed by the auditory nerve as well as the facial, deafness accompanies the facial paralysis. Thickening of the sphenoidal periosteum may involve the motor nerves of the eye; exostosis of the sella turcica has compressed the optic nerves, and produced double amaurosis. In some cases, however, the co-existence of other nervous diseases, especially hemiplegia, leads to the inference that paralysis of the nerve depends on lesion within the cavity of the skull.

The objective symptoms accompanying palsy of single cranial nerves present nothing peculiar, being simply paralysis of the parts to which they are distributed. Palsy of the third, or common motor nerve, gives rise to external squint, ptosis, and immobility of the iris.

Palsy of the fourth nerve is attended by slight downward inclination of the eye-ball, producing a difference in the level of images perceived by both eyes. Palsy of the motor branch of the fifth is extremely rare; the few examples reported are not clearly traced to syphilis. Palsy of the sixth nerve, or motor externus, produces internal strabismus; palsy of the portio dura of the seventh nerve gives rise to the well-known appearances of facial paralysis.

When palsy of a cranial nerve is accompanied by any of the usual symptoms of syphilis, there is little difficulty in recognising the nature of the affection. But it may exist alone, or be attended only by other nervous disorders. In such cases the general diagnosis is doubtful, and we have, therefore, to seek whether there be any circumstances in those cases concerning which we have no doubt that can aid us towards distinguishing affections the nature of which is less certain.

There is another point, likewise, which it is important to determine with respect to these partial nervous affections. Is the morbid change on which they depend intra or extra-cranial? The determination of this point is obviously important in connection with prognosis.

Affections of the facial nerve and of the third are more particularly connected with syphilis than any other form of partial paralysis. They are generally indirect effects of the constitutional disease, that is to say, result from the compression exercised by syphilitic lesion in some neighbouring tissue.

Facial Nerve.—I have already mentioned how paralysis of the facial nerve may occur at an early period of syphilis, and has been traced to compression from a tumefied ganglion.

In other cases the facial paralysis appears to depend on disease within the bony canal through which the nerve passes. In these, and in analogous cases, the absence of cerebral symptoms indicates an extra-cranial origin. The paralysis is almost always unilateral.

In some cases the paralysis has been preceded by nocturnal headache or fixed pain in one side of the head, after which palsy of another single nerve may supervene, or impairment of one of the senses, as the sight, taste, or smell. This extension of the disease to other single nerves, or the subsequent occurrence of partial paralysis in other parts, is very suggestive of a syphilitic origin.

Many cases of facial paralysis cannot be referred to the extra-cranial lesions just mentioned; they occur at a late period, and are often accompanied by some symptoms indicating deep-seated disease of the brain, the principal of which are hemiplegia, convulsions, mental disorders, and affections of certain nerves of sense. M. Trousseau, on the other hand, remarks that some of these cases probably depend on slight

lesion of one hemisphere; the paralysis is not so complete as in cases of pure facial paralysis, and the orbicularis palpebræ is never involved.

M. Duchene, of Boulogne, has affirmed that electricity affords a certain means of distinguishing whether facial paralysis depends or not on cerebral disease. When the nerve alone is affected, the muscles are not excited by the electric current; when the cause of paralysis resides in the brain, the muscular fibres preserve their excitability.

Third nerve.—M. Ricord observed many years ago, "that paralysis of the third nerve occurs pretty frequently during the tertiary period of syphilis; and that the absence of concomitant disorders is often the cause of serious error for those practitioners who are ignorant of how syphilis acts, and what it may produce." It gives rise to one form of syphilitic squint, which is sometimes observed amongst prostitutes.

When Dieffenbach's operation was introduced, several of these women were the first objects of experiment. The most accurate observers, indeed, agree in the opinion that paralysis of the motor communis rarely occurs except in connection with syphilis. Like other palsies of motor cranial nerves, it is usually confined to one side of the body; it may be confined to the single nerve involved, and in several cases has not been accompanied by any constitutional symptom.

Ptosis of the upper eye-lid is generally the first symptom which attracts notice; this is accompanied or soon followed by rotation of the eye-ball outwards and slightly upwards, which gives rise to double vision. Paralysis of the iris has been observed as an accompanying symptom.

The lesions connected with paralysis of the third nerve have not been demonstrated anatomically. In one case, the nerve was compressed by a gummy tumour of the sphenoid; in another, the cause of the paralysis, which was accompanied by

amaurosis, remained unknown until the presence of a tumour causing slight protrusion of the eye-ball was discovered.

A rapid cure was effected by the iodide of potassium; but the amaurosis persisted, although the eye-ball had completely resumed its normal position.

Fourth and Sixth Nerves.—Palsy of the sixth nerve is rare, that of the fourth still rarer. They are, as a rule, unilateral, and are not accompanied by other nervous symptoms. In one case of double paralysis of the sixth, which occurred ten years after infection, the nervous symptoms seemed to indicate a lesion of the cerebellum. The clinical history of palsies of the fourth and sixth nerves is still very incomplete; so far as our present knowledge goes, they do not appear to be serious indications, for all the cases reported have terminated in cure.

Neuralgia.—Syphilitic neuralgia may be divided into two kinds: the indirect, arising from some lesion of neighbouring parts, and the essential or functional disorder of the nerve. The affection, though in some rare cases occurring at an early period, is tertiary.

The seat of the neuralgia is various, but in the great majority of cases it is confined to the sensitive branches of the fifth nerve, and hence denominated *facial* neuralgia. Many undoubted cases of facial neuralgia connected with syphilis are on record. They have been traced in a few cases to compression or irritation of different branches of the nerve, from osseous or fibrous tumours, enlarged ganglia, ulceration of soft parts, &c.

In the majority of cases the neuralgia appears to be essential—that is to say, not traceable to any lesion of surrounding parts; and it then occurs somewhat earlier than the indirect form. It is, however, necessary to remember that, with regard to neuralgia, the affection may arise from irritation of the peripheral filaments of a nerve; and hence the exciting

cause of facial neuralgia may exist in a carious tooth or inflammation of the mucous membrane of the mouth.

The symptoms of syphilitic neuralgia present no characters which enable us to discover the nature of the cause whence it arises. The paroxysms are often intermittent; they seldom exhibit the character of being aggravated at night; the disease frequently exists without external manifestations of syphilis. Under such doubtful circumstances, the practitioner must mainly rely on the history of the case, and on the absence of the ordinary causes of neuralgic disorders.

M. Trousseau, however, thinks that it is generally easy to distinguish the neuralgia of syphilitic origin. The indirect form can generally be traced to some external syphilitic lesion. The essential form is frequent, and this should not astonish us, since we know that cachectic states of the constitution, such as chlorosis or rheumatism, greatly influence the development of neuralgia.

In ordinary neuralgic affections the situation of the neuralgia is influenced by the nature of the diathesis. Chlorosis produces neuralgic affections in several regions at the same time, but most frequently in the branches of the fifth nerve, or in the solar plexus. In neuralgia arising from marsh miasmata, the ophthalmic nerve is the one most frequently affected. During rheumatism the sub-occipital and sciatic nerves are those commonly attacked. In women enfeebled by uterine hæmorrhage or leucorrhœal discharges, we find gastric and intestinal neuralgia. But the regional law is different for cancer and syphilis. In those diseases the neuralgia is usually limited to an area of irritation developed round some local point from which the neuralgic pains start; while the true or essential syphilitic neuralgia may be distinguished from the indirect form by certain characters

peculiar to it. Let us take the supra-orbital branch of the fifth for example.

In essential neuralgia the branch is always painful over the notch, and the pain will be found, on pressure, to extend along the course of the nerve; but in the indirect form, the pain diminishes considerably as we recede from the central point of irritation.

Neuralgic affections of various other nerves—the sub-occipital, brachial, and sciatic in particular — have been noted; but the syphilitic origin in many of the cases recorded has not been clearly established.

From these brief observations, it will be seen that many points in the history of syphilitic neuralgia yet require to be cleared up; but one fact, and the most important, has been fully demonstrated. They are influenced in a remarkable degree by specific treatment. Many cases of neuralgia, which resisted all the usual remedies, have, through collateral evidence, been suspected as appertaining to syphilis, and then cured in a surprisingly short period.

Thus, in nineteen out of thirty-four cases collected by MM. Gros and Lancereau, a complete cure was obtained in periods varying between three and twenty days, although the duration of the nervous affection had previously extended over several years.

The following case illustrates another circumstance to which I have already alluded, viz., that the nature of these nervous affections, when overlooked from want of collateral evidence, may be at last revealed by the appearance of one or more constitutional symptoms :—

Case 22.—A lady, 23 years of age, had been confined to bed by neuralgia of the sciatic nerve, extending from the notch down to the heel. Various remedies had been employed from time to time without success. At length the nature of the case was rendered evident

by the appearance of tertiary syphilis, commencing as a lato eruption, and successively extending to the periosteum, bones and other parts. The iodide of potassium was immediately given, and the neuralgia was completely cured in fifteen days; but the remedy was continued for other symptoms.*

Another case, which resisted syphilization, may be referred to here:—

Case 23.—An infantry officer, aged 23, contracted hard chancre in September, 1848, for which he was treated with mercury during two months at the Brest Hospital. He continued apparently well up to August, 1849, when the left testicle was attacked. The iodide was now employed, and an apparent cure again obtained. The patient continued well up to February, 1851, when he was seized with severe intercostal pain, extending along the right side of the chest, and aggravated at night. His general health now appeared much affected, but no local manifestations of syphilis could be discovered. Blisters appeared to give some relief. In May, 1851, the patient entered the Cherbourg Hospital, where the surgeon in attendance at once discovered an exostosis on the third right rib. The iodide quickly dissipated the swelling, and with it the neuralgic pains. The patient remained well for four months, when he was attacked by facial neuralgia, soon followed by deep ulceration of the tongue. He was now admitted into the military hospital, Val-de-Grâce, under the care of M. Marchal, who proposed syphilization, and continued that method of treatment for about two months. The deep ulcer on the tongue soon healed, but the general state of the patient was not improved, and on the 30th of March, 1852, he applied to M. Ricord, at the Hôpital du Midi, when the following symptoms were observed:—Face pale and of an earthy hue, loss of sleep, general feebleness, night pains shooting along the right intercostal space from a central point of pain, dyspnœa, alopecia, a small fluctuating tumour over the sacrum, and two tumours of similar character over the right tibia, numerous scars over the body, the traces of syphilization.

Ordered twenty grains of the iodide of potassium daily, with an ounce and a half of the iodurated oil; tincture of iodine to the tumours. On the 9th of April the intercostal pain had greatly diminished, and the different tumours were much reduced in size. This improvement advanced rapidly. On the 20th of April tumours and pains had entirely disappeared. To continue the treatment for two months, as a measure of precaution.†

* Union Medic., Mai, 1852. † Zambaco, l. c., p. 126.

Brain.—In the following section I do not pretend to give either a methodical or a complete account of cerebral syphilis. Any attempt of the kind would be misplaced and premature. The time has not yet arrived for treating in a complete manner the difficult subject of cerebral diseases connected with syphilis, and when the time does come, their history should be traced by the hand of a master.

Cerebral diseases in syphilitic patients may be divided, clinically speaking, into two forms—the paralytic and the convulsive. The former comprehends diffused paralysis, partial paralysis, and hemiplegia.

In employing these terms, it is necessary to premise that they have not exactly the same signification when applied to syphilitic affections, as they have when used to designate analogous disorders of an ordinary kind. I have substituted the term diffused for general paralysis, which latter has now come to have a special signification, both pathologically and clinically. The same remark applies to syphilitic epilepsy; but, as I have observed already, we are not yet in a condition of knowledge sufficiently advanced to reform our medical nomenclature with respect to syphilis.

Paralytic Affections.—Hemiplegia may come on suddenly, assuming the form of apoplexy, as in ordinary cases; but this is a rare occurrence. It is, moreover, confined to persons under forty years of age.

The fit, as it is popularly called, consists in the sudden loss of consciousness and power of motion. The patient is struck to the ground, remains unconscious for some time, and on coming to himself, observes that one side of the body is paralyzed. In some cases the loss of consciousness is not complete, although the power of motion is totally lost.

In one case, the attack consisted in sudden loss of conscious-

ness on several occasions, without the supervention of paralysis. The patient complained previously to each attack of headache, vertigo, and a sense of creeping in the legs; the memory was slightly affected. Mercury effected a cure in two months.

Severe headache is a very constant premonitory symptom of these sudden attacks; it has been noticed in nearly all the cases, sometimes with vertigo, or more rarely with cramps in one limb. Notwithstanding the apparent severity of this apoplectic form, it seldom terminates fatally; the lesions connected with it are, therefore, not clearly ascertained. Dr. Wilks and Dr. Hughlings Jackson suggest that some of the fatal cases are probably dependent on embolism of the middle cerebral artery giving rise to softening.

In the case of the prostitute observed by Dr. Todd, inflammatory softening was discovered in one hemisphere.

Syphilitic hemiplegia is by far the most frequent form under which serious disease of the brain presents itself, and there is much reason to believe that many of the cases described as ordinary paralysis in systematic works belong to syphilis.

It is generally preceded by more or less severe headache, which often presents a neuralgic character, being confined to certain parts of the head, or extending in a particular direction. The headache is followed by numbness or a pricking sensation in the limbs; the movements are vacillating; some loss of power ensues; and then more or less paralysis on one side of the body is established. If the disease, uninterrupted by treatment, pursues its course, we now observe various paralytic affections of certain cerebral nerves, or the nerves of sight, taste, and smell may be affected. The intellectual faculties are also more or less disturbed in many cases. The memory becomes weak; the temper uncertain and excitable; the power of application to usual studies impaired, &c.; finally,

the patient sinks into a lethargic state, becomes comatose and dies.

But the progress of the disease, the successive development of symptoms, and the termination, do not always follow the general course now indicated. The latter is frequently irregular; the symptoms may be intermittent, or may succeed each other in a disorderly manner—the disease passing from paralysis of one muscle to another, affecting different senses, disordering the intellectual faculties in various degrees, producing temporary paralysis of one limb, exciting convulsive movements, and finally either yielding, as it generally does, to specific treatment or terminating in death.

If we endeavour to connect these varied symptoms with organic lesions, we find that syphilis may produce cerebral disease in several ways.

1. Disease of bone may extend to the dura mater, and thence through the membranes to the cerebral hemispheres. This is a frequent though *indirect* cause of cerebral disease during syphilis.

2. Circumscribed or diffused gummy deposits in the substance of the brain may excite irritation, or produce softening of nervous tissue.

3. Softening without tumour, which may be inflammatory, or the result of embolism or of pressure on an artery, as observed by Virchow, Gildemeester, Dr. Wilks, and Dr. Moxon.

The connection between symptom and lesion is often difficult to trace; but when we find a patient successively attacked by wandering or neuralgic pains, then by various local modifications of sensibility or motive power, and finally by partial paralysis or hemiplegia, we shall have great reason to infer the specific origin of the disease; and still more so, if partial convulsions have preceded or are mixed up with the paralytic disorders. In ordinary diseases of the central

nervous system, where the lesions, as a general rule, are more defined and restricted, this succession and mixing up of nervous symptoms seldom occurs; and it seems probable that many of the exceptions will hereafter be traced to a special cause.

Without attempting, then, to establish a fixed relation between any particular kind of morbid change and the train of symptoms supposed to be produced by it, I may state in a general manner that tumours and softening of the central parts of the brain are more especially connected with paralysis, while the indirect lesions of the superficial parts or of the cerebral membranes chiefly manifest themselves through convulsion or disorder of the intellectual faculties.

The seat and multiplicity of these lesions explain in a great measure the irregular course of syphilitic hemiplegia. It may be remarked, in the first place, that the specific disease does not give rise to effusion of blood. The regular course of true apoplectic paralysis after clot is, therefore, not met with.

Again, the lesions, whether direct or indirect—whether arising from cranial exostosis, caries, or cerebral tumour, generally occupy the anterior part of the brain. Caries, which is a frequent indirect cause of the cerebral disease, is often seated in the frontal bone. MM. Gros and Lancereau* have collected thirty-one *post-mortem* examinations in cases of direct cerebral disease—that is to say, where the lesion existed in the substance of the brain itself, and had not extended from neighbouring parts. In seven cases, softening of the brain was the lesion discovered, and in six out of the seven cases the disease occupied the anterior lobes of the brain. In twelve cases the true gummy tumour was found, of various sizes and in different situations. Thus, in six cases

* Gros et Lancereau, des Affect. Nerv. Syph., Delahaye, Paris, 1861, p. 157.

the tumour occupied one of the anterior lobes; in three, the corpus striatum; in three, the middle lobe. In three out of the six cases first named, the tumour was seated in the neighbourhood of the optic nerves, which were injured by it.

As for the diffused form of gummy exudation, it was seated three times in the hemispheres, once at the base of the brain, and once in the centre of the cerebellum.

These brief details assist us in understanding several points connected with the symptoms of syphilitic diseases of the brain. From the number of morbid changes, we deduce the possibility of numerous varied symptoms; from the preference of syphilis for the anterior parts of the brain, we have some indication of the cause why hemiplegia is often accompanied by paralysis of certain ocular nerves, by amaurosis, and by disturbance or even derangement of the intellectual faculties. The special nature of the lesion also leads to the understanding of a fact which is not to be reconciled with anything that we know from the history of ordinary cerebral affections. These palsies of ocular nerves, this amaurosis, the hemiplegia, the mental disorders sometimes amounting to actual mania, often disappear in a few weeks under special treatment, yet, like other manifestations of the syphilitic diathesis, they are liable to recur over and over again in a mitigated form. The unstable nature of the gummy tumour, and its liability, as a syphilitic product, to relapse or to be produced afresh, lead to the understanding of those peculiarities which no other tumour presents in a like manner.

Hemiplegia, as I have said, commences with headache and ends in loss of power; the intermediate stage between the premonitory symptoms and the full attack being occupied by a great variety of nervous symptoms.

Headache is a very frequent and important symptom of cerebral syphilis, presenting two characters, which, though

not special, yet are worthy of attention. It is generally severe and persistent. The severity of the pain has been noticed by all writers. In some cases it is fixed to a particular part of the head, and it has been observed that the side where the pain exists is often opposite to that which is subsequently attacked by paralysis. In many cases the violence and direction of the pain give it a neuralgic character. The pain may be absent during the day; it often commences towards evening, and attains the greatest intensity during the night; but the nocturnal exacerbation is much less characteristic than that connected with disease of the fibro-osseous system. The pain, in several cases, gives rise to, or is followed by loss of sleep and some disturbance of the intellectual faculties. Benjamin Bell drew attention to this circumstance, and showed how one of the earliest mental disorders consisted in a peculiar change of temper, the patient being excited by trifling circumstances, and unable to apply himself to his usual occupations. In one case which came under my own care, I was much struck by this change of temper and great excitability.

The persistent nature of the headache is another character which deserves attention. The pain may continue for months together, but it is rarely permanent, being marked by various degrees of exacerbation, or appearing and disappearing at uncertain intervals.

During the course of this headache, and previous to or during the manifestation of hemiplegia, several nervous disorders may set in, so irregularly as to defy any classification in the present state of our knowledge. They may be briefly enumerated in the order of apparent frequency: paralysis of the facial nerve, partial or total amaurosis, deafness, paralysis of the motor communis, facial neuralgia, paralysis of the motor externus, impairment of the sense of taste.

The march of syphilitic hemiplegia is usually slow and progressive. It may appear and disappear several times before it becomes confirmed, a character probably depending on varying conditions of the nerve-tissue surrounding the syphilitic lesion.

The paralysis of syphilitic patients is not always confined to one side or to single nerves. In several cases it assumes a more diffused form, and gradually extends to the greater part of the body, being characterized by its occurring during the prime of life, and by the absence of symptoms which indicate cerebral softening or clot.

In the cases recorded, all the patients except one were under thirty-five years of age; yet the period of evolution at which this diffused form of paralysis occurs is late, being usually from eight to ten years after infection. The disease commences with numbness, or a sense of formication in the lower extremities; the latter become weak, and the loss of power then gradually ascends, until the upper as well as the lower extremities are completely paralysed. In a few cases the paralysis has extended to the muscles of the tongue and pharynx.

The paralysed muscles may be atrophied, but the sensibility usually remains intact. The intellectual faculties are sometimes impaired, but not to any considerable degree. Sufficient opportunities have not presented themselves for ascertaining the morbid changes connected with this form of paralysis. Another form, however, has been described, attended by delirium or imbecility of mind. In these cases, inflammatory softening, the result of meningitis, has been found on the surface of the hemispheres; but the syphilitic nature of the affection has not been sufficiently established in many of the reported cases. The paralytic symptoms, likewise, often extend from above downwards, and towards the

termination of the complaint a variety of symptoms, apparently connected with softening of the brain, is observed. The evolution of the symptoms in many of these cases is slow and remarkably regular: headache; slight disturbance of the cerebral functions; partial paralysis, always connected with the sixth, seventh, or third nerves; strabismus; finally, diffused paralysis and mania.

The following cases illustrate the features under which this form of syphilitic paralysis presents itself:—

Slight Epileptic Attacks—Impairment of Mind—Muscular Debility—Relief under Treatment—Relapse—Cure.

Case 24.—M. J., aged 35, contracted indurated chancre in 1850. Secondary symptoms appeared a few months afterwards. They were treated by mercury; disappeared, and the patient seemed to enjoy excellent health until 1856, when his medical attendant permitted him to marry. The first child born suffered under congenital syphilis, and died, after having infected its mother. In the same year the patient complained of pains in the bones, and had occasional fits, nearly amounting to syncope.

In December, 1858, he consulted a physician. All the limbs were very weak, the memory impaired, the temper extremely irritable. There was no headache, or trace of constitutional syphilis on any part of the body. The physician whom he last consulted had regarded the case as one of ordinary paralysis, and administered strychnine. M. Follin, on the contrary, guided by the history of the case, diagnosed syphilis, and ordered mercury, with the iodide of potassium. In twelve days the improvement was manifest; the patient could walk without dragging his legs after him; the mind was clearer, the utterance more distinct. The symptoms, in a word, were disappearing gradually, and the cure was nearly completed, in spite of great annoyance arising from family quarrels, when the patient went to the country, and suspended his treatment. A fortnight had not elapsed when the paralytic symptoms returned, under exactly the same form as before. In February, 1859, the former treatment was resumed, with like success; the symptoms were soon relieved, and finally disappeared altogether.*

The following case, recorded by M. Robert, of Marseilles,

* Zambaco, l. c., p. 325.

and which terminated in paralytic dementia, furnishes a striking example of the numerous nervous disorders that appear during the course of cerebral syphilis :—

Tertiary Syphilis—Headache—Partial Paralysis—Gradual Extension to other parts — Improvement under Treatment — Relapse — Diffused Paralysis and Dementia.

Case 25.—Madame L., of nervous temperament, contracted syphilis in 1852. Ulceration of the mouth, with considerable engorgement of the cervical glands ensued, and at a later period palmar psoriasis. In 1854, osseous pains in the legs, with several gummy tumours over the tibia. These disappeared under treatment. During the years 1854, 1855, and 1856, the patient appeared to enjoy pretty good health, being occasionally troubled by headache, which always yielded to a few doses of the iodide of potassium.

In 1857, the headache became more severe, and assumed a periodic character. As it resisted the iodide, M. Robert tried quinine, which cut short the accesses, but did not evidently influence the diathesis, for a sense of formication in the right arm set in, soon followed by partial paralysis of the right eyelid. The patient now visited Paris for further advice. During her stay there, in March and April, 1857, serious symptoms manifested themselves: severe nocturnal pains about the orbit and back of head, complete paralysis of right upper eyelid, deviation of the mouth to the right side, considerable depression of the mind. Alarmed at this condition, the patient returned to Marseilles. M. Robert at once gave the iodide in largely increasing doses, but without effect; whereon he exhausted the catalogue of antispasmodic remedies, likewise without result. Recourse was then had to strychnine and to electricity, yet no benefit ensued.

In June, 1857, the following symptoms were noted: severe pain, increased by pressure, over the right side of the temporal bone, near the occipital; complete facial paralysis of the left side, without any impairment of sensibility; complete paralysis of right orbicularis, with dilatation of pupil; strabismus, and other symptoms indicating paralysis of the third nerve. The muscles of the pharynx were likewise involved; the right arm weak, and occasionally the seat of spasmodic movements resembling those of chorea; paralysis commencing in right lower extremity. During this period the patient, although very feeble, had an enormous appetite, yet seemed to have lost the consciousness of how much she had been eating. Several symptoms resembling hysteria also existed. In consequence of these

latter, and as the patient had been subject to leucorrhœa, recourse was had to a tonic treatment, with iron, &c. The condition of the patient, however, became more aggravated, and she was confined altogether to bed. Under these circumstances, the advice of an eminent physician was sought, and, after a most careful consideration of the case, it was concluded that the disease probably depended on some lesion either of the bones or nervous substance at the base of the brain. A mixed treatment of mercury and iodide of potassium was therefore adopted.

On this occasion the effect of the specific remedies was very rapid. The condition of the patient improved visibly from day to day; and on the twentieth day she was able to get up and walk without much difficulty. On the 10th of August all the symptoms had disappeared, except a slight weakness of the eyelid and dilatation of the pupil. The patient, in fact, found herself so well that she was able to undertake a journey to Algiers, where she remained for a month. On her return, she appeared to be perfectly well, one symptom of the visceral affection alone remaining, viz., slight dilatation of the right pupil, with a trace of strabismus. From this time to March, 1858, nothing remarkable occurred, when the patient was seized with fainting fits, of an hysterical character, which quickly yielded to the iodide and tonics. Another pause of several months now ensued, but it was deceitful. The patient was again attacked by the same series of nervous and cerebral disorders which had previously been removed by iodine. These continued to progress, until a complete state of paralytic dementia was established, under which the patient finally sank.*

Paraplegia.—This form of paralysis, which has its origin in disease of the spinal chord, has been attributed to syphilis by many writers. Joseph Frank considers that the constitutional disease is a very frequent cause of paraplegia. In 1846, M. Ricord said, "I am fully convinced that a great number of cases of paraplegia depend on syphilis in its tertiary stage." M. Bazin goes much further, and expresses his belief that three-fourths of all cases of paraplegia have a syphilitic origin.

There is nothing peculiar in the symptoms of the special form which lead to the discovery of its specific origin. An analysis of the recorded cases shows that paraplegia occurs at

* Robert, Traité des Mal. Vener., p. 643. Baillière, Paris, 1861.

a late period of the constitutional affection, often from three or five to ten years after infection of the system. In one case, however, which occurred in my own practice, paraplegia set in *ten* months after the initial lesion.

The attack has been sudden in a few cases; but in the majority, the progress of the disease is slow and insidious. It is seldom preceded by dorsal pain or any other local sign of disease in the chord or its bony canal.

The earliest symptoms noticed are some modification of sensibility in the limbs about to be affected.

The patient experiences a sense of numbness or creeping in the lower extremities; or a feeling of cold, and occasionally pains; the limbs then become weak, and the paralysis is gradually established, finally involving the bladder and rectum. In cases where the disease has not been interrupted by treatment, several years may elapse before it reaches its complete stage, yet it has been noticed that the power of motion is rarely completely annihilated. The sensibility of the limbs is lost in some cases, preserved in others, as we might expect from the different functions of the spinal nerves; in some cases, power of motion and feeling are both lost.

Although paraplegia occurs at so late a period, it is often attended by other symptoms of the constitutional disease. Such a conclusion, at least, results from an analysis of the recorded cases; but it is quite possible that this inferred frequency depends on the circumstance that these cases, observed within the last few years, have been more carefully reported. The concomitant symptoms were, in nearly all the cases, those of the tertiary period. In one only the paraplegia coincided with a papular eruption. The most frequent of the co-existing affections was subcutaneous tubercle, or tubercular ulceration of the skin. In many other cases were observed late eruptions, as ecthyma, rupia, and psoriasis; in

a few, the syphilitic testicle, iritis, and nodes. It is worthy of note that all the patients, except one, were under thirty-seven years of age.

Post-mortem examinations are rare. In almost all the cases the morbid change described has been softening; but the initial change has not been satisfactorily made out.

The following case, however, which I had occasion to observe in private practice, is illustrated by a very minute *post-mortem* examination:—

Pain in Back—Weakness of Lower Extremities—Psoriasis—Improvement under Treatment—Relapse—Complete Paraplegia—Death—Extensive Softening of Spinal Marrow.

Case 26.—J. S., 37 years of age, contracted a hard chancre, for which he was treated with mercury, in the form of pills, from the 2nd of April, 1861, until June 6th of the same year, when he consulted me. At this date slight induration remained in the cicatrix of the sore. The glands in each groin were enlarged and indurated. A faint eruption of psoriasis existed on the palms of the hands and on the wrists. His general health was in other respects good, and he appeared to have borne the mercury remarkably well.

He was directed to continue the mercury, which he did, until July 20th, when he complained of pains in the arms, and at the back of the head, which were especially severe at night. These symptoms were relieved by the iodide of potassium, which was substituted for the mercury.

On August 17th he was attacked with sore-throat, and an eruption appeared on the face, which he described as sore spots. He was absent from London at this time. These and other slight secondary symptoms, together with occasional pain in the head, continued to trouble him for some months, although he had been taking, almost constantly, the iodide of potassium.

On the 16th October he attempted to travel from London to Newcastle, but was obliged to suspend his journey, in consequence of severe pains in the arms and head; in addition to which he became affected with ulceration of the throat. The glands behind the ears and at the back of the head and neck also became enlarged and very painful at this time.

On the 25th he had an attack of the right eye [iritis], which produced almost total blindness for a time, but which, after recurring

once, subsided in about three weeks, under the ordinary mercurial treatment.

The symptoms continued, with various alternations, till February, 1862, when he observed that after having suffered for a fortnight from pain in the back, the legs became weak, and the power of controlling the bladder greatly diminished. The treatment at this time appears to have consisted in the use of opium to relieve the pains, and the administration of wine or brandy to sustain him; iodide of potassium was also administered.

February 29th, 1862.—The psoriasis has reappeared on the arms and trunk; the pains have nearly disappeared. The state of the throat is much improved, but the lower extremities still continue weak. He was directed to visit Hastings, from which he returned much improved in his general health.

March 29th.—Very severe pains, extending from the shoulders down the back.

April 4th.—Severe pain in the back still continues. Power to move the left leg almost totally lost. Hardly any control over the bladder. From this period up to the 10th May the symptoms were much relieved by the iodide of potassium, which was uninterruptedly employed. The limbs now feel weak only; the pain in the back is slight; the power of retaining the urine is much restored. The general improvement, in fact, was so great that the patient was enabled to return to his native place, Christiania. For his subsequent history I am indebted to the kindness of Dr. Adam Owre, of University Hospital, Christiania.

The patient was admitted for the second time into the hospital on the 15th September, 1863. After his return to Denmark, he was able to go about with the aid of a stick; but early in 1863 his condition suddenly became so much worse that he was compelled to take to his bed. After several alternations of improvement and relapse, he was submitted, from the 6th January to the 26th June, 1865, to several methods of treatment in succession, viz., syphilization, iodide of potassium, strychnine, electricity, and, finally, sulphur internally, but all without effect.

During the summer of this year the patient had been sent to the Sandeford baths, from which he received some benefit, as the bed sores began to heal, and the appetite to return; but early in September the patient was suddenly seized with cardialgic pains and spasmodic twitchings in the muscles and chest, and loss of appetite. On re-admission to the hospital, it was seen that power of motion and sensation was completely lost in the lower extremities, and in the body as high up as the ensiform cartilage in front and the eighth dorsal vertebra behind. The urine and fæces were voided involuntarily, but

reflex motion could be excited in the paralysed limbs. Large bed-sores existed on various points exposed to pressure, and after intense sufferings, the patient died on the 4th October.

The spinal marrow of this patient was exhibited to the Medical Society by Professor E. Winze, who gave the following account of the *post-mortem* appearances. The spinal vertebræ were in a normal state. The fibrous envelope was here and there slightly injected, and presented traces of a delicate false membrane, which connected it with the serous membrane at the dorsal portion of the chord. The serous lining was distended by a serous effusion, particularly near the cauda equina, and here and there covered with small osteoid, jagged plates. The roots of the nerves proceeding from the spinal marrow were normal. The principal alterations were found in the substance of the spinal marrow itself. The upper half of the cervical portion was healthy, but from this point downwards, as far as the middle part of the dorsal region, a particular degeneration was found, increasing in intensity as it had proceeded from above downwards. At the middle of the dorsal part, the lesion was less marked, and it continued to get lighter until it reached the lower part of the dorsal region, where the chord again became healthy. This difference of intensity consisted in the extent to which the nervous substance was altered. At the upper part, the lesion was chiefly confined to the posterior surface of the chord, but lower down the white substance became more and more implicated. In the portions slightly affected, the surface of the chord presented a greyish, spotted, transparent colour; where the lesion had been more severe, nearly the whole of the white substance was transformed into a greyish-yellow, transparent mass, not unlike cold joiner's glue. This degeneration proceeded from the surface of the chord towards its centre, and was most advanced in the posterior columns, especially on the left side; but the anterior were affected in a much lesser degree. At the middle of the dorsal portion, the white substance of the chord was almost completely softened and converted into the glue-like mass, so that scarcely any of the white substance remained. The boundaries of the grey substance were here also undefined.

On examination with the microscope, the following appearances were noted:—

1. A number of small, narrow, homogeneous, slightly-shining bodies, of the size and shape of spindle-cells, club-formed at one end, pointed at the other, probably the remains of nerve-fibres.

2. Fatty aggregated globules and free fat granules, sometimes in great quantity, particularly in the opaque yellow parts.

3. Amylaceous corpuscles.

4. Pigment granules and vessels transformed into pigment streaks.

These various elements were all surrounded by a finely-granulated

mass, which contained a few vessels, and here and there a small quantity of fibrous tissue.

In several parts which presented a normal appearance to the naked eye, many of the above elements were to be seen. In the grey substance at the middle of the dorsal part of the chord, the ganglion cells were indistinct, and presented the appearance of dentated pigment heaps, without membrane or prolongations.

Brain.—Nothing remarkable was found in the cavity of the skull, except a small exostosis on the inner side of the right os Bregmatis, and traces of osteophytes on the frontal bone.

Chest.—Left lung adherent to the pleura inferiorly, and here consolidated by passive congestion. The branch of the pulmonary artery distributed to this lobe was blocked up by a greyish-yellow thrombus of the size of the little finger, dry on the outside and softened in the centre. The thrombus extended into the branches of the artery, and quite down to the consolidated portion of the lung.

Abdomen.—The liver was healthy; the kidneys presented a greyish, streaked appearance, but on minute examination were found to be healthy; spleen, simply enlarged.

Dr. Onsum, the University chemist, having applied Schneider's method, discovered mercury in the liver, kidneys, and brain. This mercury was exhibited to the Medical Society.

The following interesting case may serve as a companion to the preceding :—

Absence of Secondary Period—Tertiary Symptoms—Paraplegia—Failure of Remedies—Death—Gummy Deposit in Spinal Marrow.

Case 27.—A man, aged 35, was admitted into the Hôtel Dieu, under the care of M. Rostan, in April, 1855. The patient had a well-marked cachectic appearance. In 1850, he contracted indurated chancre, for which he underwent a mercurial treatment for two months. No secondary symptoms ensued, but the general signs of the diathesis became manifest, and periosteal tumours appeared on the sternum and lower jaw. The patient now entered the Hospital St. Antoine, where he took the iodide of potassium without any benefit.

When admitted into the Hôtel Dieu, the patient was reduced to a very low state; the lower extremities were almost completely paralysed, with loss of sensibility; he complained of severe night pains in the bones of the legs, and also of sciatica on the left side. A periosteal tumour occupied the upper part of the sternum, and a small ulcerated tumour was seated in the right mamma. This latter was at first regarded as cancerous, but examination with the microscope showed the presence

of fibro-nuclear elements, and on this discovery the special diagnosis was chiefly founded. There was, however, another small periostcal tumour on the left maxillary bone, producing loss of sensibility in the lower lip on the same side. In addition to these, six gummy tumours, about the size of large peas, were seated at different points along the integuments covering the spine.

A mercurial treatment, followed by the iodide of potassium, was employed without benefit. The cachectic state continued to progress, and the patient sunk in an extreme state of marasmus.

On examination after death, a gummy tumour as large as a walnut was found over the left sciatic nerve, which it compressed. The lower part of the spinal marrow, in its dorsal and lumbar regions, was also compressed by a gelatinous effusion of gummy consistence. M. Charles Robin made an histological examination of the different tumours, and of the exudation.* They all contained the elements which I have already described as characterizing the gummy deposit.

* Zambaco, l. c., p. 250.

CHAPTER XXIII.

CONVULSIVE AFFECTIONS.

Ordinary Epilepsy—Contrast with Syphilitic Form—Epileptic Vertigo—Epileptiform Convulsions—Distinguishing Characters—Mixed Form—Symptoms—Illustrative Cases—Treatment.

Syphilitic disease of the cerebral system most commonly manifests itself as a mixed form of convulsion and paralysis. Convulsion prevails in some cases, paralysis in others, so that it becomes difficult to say by what name the general affection should be denominated.

The symptoms and course of ordinary epilepsy are well known. Its most frequent cause is said to be fright or some violent mental emotion; it occurs usually at an early period of life. The true epileptic fit sets in suddenly, and is not ushered in by premonitory symptoms. The patient falls to the ground, loses consciousness, and is seized with convulsions. During the first stage, which lasts for a very short period, these convulsions are tonic, and affect the muscles of the face, chest, abdomen, and limbs. They are immediately followed by a stage of clonic convulsion, which consists in irregular alternations of flexion and extension of the muscles previously affected. The convulsive stage, in cases of true epilepsy, seldom lasts beyond a few minutes, and is immediately followed by, or rather terminates in, a state of

profound stupor, continuing from several minutes to an hour or so. The patient commonly recovers his usual health on the following day, and continues apparently well until the next attack; but he may suffer from headache for a few days, and in rare cases remains partially paralysed, or exhibits some traces of mental impairment.

The above description does not apply to the great majority of syphilitic cases characterized by the occurrence of epileptiform convulsions. These latter are frequently preceded by some severe premonitory symptoms; they are often attended by partial paralysis or disorder of the mental faculties, and the patient seldom enjoys his usual health during the interval between the attacks. These symptoms, as an eminent physician has observed, indicate some organic disease of the brain.

The epileptiform convulsions of syphilis, like true epilepsy, present themselves under several aspects. The disease appears to be broken up into parts. In some cases we find merely epileptic vertigo, or the "*petit mal*," as it is called by French writers. In certain other cases, the patient is attacked by a form which, from its symptoms alone, cannot be distinguished from ordinary epilepsy. In the majority of cases the disease is a mixture of paralysis and convulsion, constituting a form very characteristic of syphilis, but for which no appropriate name has yet been suggested.

Ordinary epilepsy, as we have seen, is composed of loss of consciousness terminating in convulsive movements and stupor. In epileptic vertigo, the convulsions and stupor are absent, while the loss of consciousness is replaced by a state which has been sometimes denominated "fits of surprise." These generally consist in fits of absence or astonishment, suddenly interrupting any acts in which the individual may happen to be engaged. He is quite unconscious of the state himself, or of its approach, but suddenly interrupts his

conversation or act, cries out, and becomes incoherent for a short time. The attack may last for a very short period only, yet during this time the ideas are confused and the memory impaired; sudden impulses towards irrational acts are likewise manifested, and the patient becomes very irritable or difficult of control. These attacks of the "*petit mal*" sometimes take place during the intervals between the epileptiform convulsions, which latter appear to have degenerated into the "lesser evil." A still milder form consists in vertiginous giddiness, with a tendency towards fainting, but these are usually premonitory symptoms, accompanied by, or alternating with, severe and prolonged headache. In some cases, these attacks of epileptiform vertigo are so slight that the patient is quite unaware of their existence. The patient utters a few incoherent cries, has trembling of one or more limbs for a few minutes, and then thinks that he has had a dream. The convulsive element of epilepsy may likewise be observed under a partial form. Instead of the general convulsions which characterize a regular fit, the patient may be affected by partial unilateral convulsive movements in the muscles of the face or limbs. When these spasms of parts on one side of the body are followed by passing paralysis, Dr. Hughlings Jackson regards them as specially leading to a suspicion of syphilis.

Numerous cases on record show that epileptiform convulsions in syphilitic patients may present themselves under appearances so closely allied to those of ordinary epilepsy, that they cannot be distinguished from it by the aid of the symptoms alone. This form, however, is comparatively rare. The premonitory symptoms are mild, consisting of headache and occasional attacks of vertigo; these are followed by convulsions, which continue to appear at various intervals, until the epileptic attack is finally established; or

the disease, having been preceded by headaehe and giddiness, which have passed away, may eommence by a sudden fit. The duration and frequeney of the attaeks are extremely various; but it is unneeessary to enter into further details, as the symptoms of this form resemble those of ordinary epilepsy in the elosest manner. There are, however, certain peeuliarities whieh deserve attention, and will aid our diagnosis in doubtful cases. The first of these is the *age* of the patient.

Ordinary epilepsy usually commences before the age of puberty. Esquirol has laid down the law, that "the tendeney to epilepsy is in the inverse ratio to the age of the patient." Syphilitie epileptiform eonvulsion, on the eontrary, is a disease of manhood. The mean age in forty cases whieh I have noted was thirty-five years. In the few eases which have oecurred earlier, the disease has been generally traced to an hereditary taint, or to eertain abandoned aets whieh are only to be found amongst the inhabitants of large cities.

The seeond eharaeteristie of syphilitie eonvulsions, as distinguished from true epilepsy, is that the patient seldom enjoys even apparently good health during the intervals between the attaeks. These may often consist in slight disturbanees of the nervous system, but the observant practitioner will recognise them as signs indieating the existenee of some *permanent* eause.

A still more distinct eharaeter of this form is that the disease yields in a very remarkable manner to speeific treatment. The obstinaey of ordinary epilepsy is proverbial; but all the reeorded eases of this form, when it resembles true epilepsy, have been cured by mercury or the iodide. This faet, were it alone, demonstrates the practieal value of reeent

researches concerning the relation which exists between syphilis and disorders of the nervous system.

As a remarkable example of the effects of specific treatment in syphilitic epileptiform convulsions, the following case from Trousseau may be quoted :—

CASE 28.—Last year I was consulted by a lady 71 years old, who since the age of 40 had been subject to attacks recurring with a daily increasing frequency, and so much so that she had as many as twenty-one in the twenty-four hours. The diagnosis of her case was written in large type in her face, for she had on the forehead a broad, deep scar, which began above and outside the right eyebrow, and penetrated the frontal bone, which had necrosed. There had also been necrosis of the nasal bones, for the nose was broken down and depressed. Under the influence of mercury and the iodide of potassium, rapid improvement followed; so rapid, indeed, that she had only one attack during the very first month, and this proved the last.

The complex form of convulsion appears to be special to syphilis. It consists in an assemblage of convulsive and paralytic disorders, irregularly grouped, and succeeding each other in a disorderly manner. The disease, in fact, is neither pure epilepsy nor paralysis; it has been generally traced to inflammation of the membranes or gummy deposit in the cerebral tissue. The pathological anatomy, which has been clearly established, assists us in explaining the diversity and mixture of symptoms alluded to. Inflammation of membrane will produce headache; irritation from node, or extension of disease to the grey substance, will excite convulsions; pressure from a gummy tumour, or softening of nerve-tissue, will produce various paralytic disorders, according to the seat and mode of development of the lesions. The peculiar development of the gummy tumour—so unlike that of cancer or scrofulous tubercle—may, I think, be reasonably accepted as an explanation of many peculiarities

accompanying cerebral syphilis. There is no other tumour —and of this we have ocular proof during the exanthemata —which sometimes advances and retreats in so rapid a manner. There is no other tumour of constitutional origin which disappears in so short a time, before our eyes, under specific treatment. It is a tumour which may lie dormant for a considerable period, and then, under some exacerbation of the diathesis, may become quickly developed, pressing on neighbouring parts, or exciting inflammation in them.

The mixed form of cerebral disease—that under which syphilis most commonly manifests itself—is a compound of paralysis and convulsion. In one series of cases it begins with paralysis and ends in convulsion; in another series, convulsive movements first manifest themselves, and are followed by various degrees of paralysis in different muscles. This, however, is an artificial distinction, as likewise would be one drawn from any predominance of convulsion over palsy, or *vice versâ;* yet it may be remarked, that the cases in which the convulsive element prevails are the more frequent.

The symptoms attending this form of cerebral syphilis may be divided into three stages—the premonitory; the admonitory; the paralytic or the convulsive.

The chief premonitory symptom is headache, which presents three well-marked characters. It is extremely severe and persistent; it is often confined to a particular part of the head, and is sometimes aggravated by pressure over the seat of the pain; it is often nocturnal. The severity and persistent nature of the headache are characters which should excite special attention in all suspicious cases. Being often nocturnal, it deprives the patient of sleep; while its severity often renders the temper peculiarly excitable, thus paving the way for future mental disorder. In one of my own cases, the patient described the pain as if resulting from violent

blows with a sledge-hammer. The headache is, moreover, remarkably persistent. It often precedes the outbreak of the disease by several months, or even a year. Giddiness, or vertigo, sometimes amounting to vertiginous epilepsy, often accompanies or replaces the headache now spoken of.

The second, or admonitory stage, consists in a succession of various nervous or paralytic disorders following each other irregularly, and with various degrees of intensity.

The muscular system is attacked in some cases, the nervous in others; but it by no means follows that the kind of symptoms which appeared earliest should predominate during the whole course of the stage.

The convulsive symptoms, which precede the fit, and warn us, not so much of its approach as of its probable occurrence at some future period, are various. They sometimes resemble those of the "*petit mal.*" In one case the patient, besides giddiness and ringing in the ears, complained of a sensation as if he were carried about by a whirlwind for a few seconds. In other cases the fit is preceded at various intervals of time by convulsive movements on one side of the body. A sense of numbness creeping up one arm from the fingers to the shoulders, and resembling a kind of aura, is an admonitory symptom that has sometimes been observed; in other cases, the movements consist in a kind of trembling of the muscles rather than in convulsion. Irregular attacks of headache also occur in those cases which have not presented the severe and permanent headache already described. Irritability of temper and partial loss of memory often occur likewise during this stage; and in some cases the impairment of the mental faculties is still more serious.

In another series of cases the disease commences with symptoms of palsy. Thus we may find a dragging of one leg or imperfect paralysis of one arm, facial paralysis, palsies of

different ocular nerves, and amaurosis, irregularly grouped together, or succeeding each other in a disorderly manner.

The duration of these symptoms cannot be fixed with anything approaching certain limits. After having continued for several weeks, or many months, the fit or epileptiform attack ensues. This latter is sometimes sudden and severe; but in the majority of cases, several fits occur before the disease assumes the aspect of epileptiform convulsion.

The fit itself is far from presenting those well-defined characters which accompany a true epileptic attack. Thus, the patient may fall down suddenly, but the convulsions may be confined to the muscles of the face; and in mild cases of this kind, the subsequent fits may be reduced to mere loss of consciousness, without convulsion.

In other cases, the attack consists in convulsive movements of one side of the body, with imperfect loss of consciousness. The duration of the fit is also much longer than that of true epilepsy. But these details cannot be followed out for the present with much advantage. It may suffice to say that the elements of the true epileptic attack, viz., the suddenness, the convulsion, the stupor, and the duration, are modified during the syphilitic affection in a variety of ways as regards intensity and succession.

The condition of the patient during the intervals between the convulsive fits requires particular attention. It generally indicates the existence of some organic lesion, not only permanent in its nature, but extending from one portion of the brain to another, or developed successively in different parts of the central nervous system.

These intercurrent symptoms consist in attacks of epileptic vertigo, of partial paralysis affecting various muscles, especially those of the eye, of impairment of certain organs of sense, and very frequently of more or less disorder of the

intellectual faculties. These partial palsies are seldom permanent during the earlier stages at least, but they are apt to recur, or to manifest themselves in other muscles. Thus, even hemiplegia has been known to disappear after fifteen days.

Some disorder of the intellectual faculties often manifests itself during the interval between the fits, and contributes to impress a peculiar character on the disease. The most frequent is an impairment of the memory as regards words; the patient is unable to recall the word which expresses his idea; and this defect may be carried so far as to lead to the belief that the difficulty of expression depends on paralysis of the tongue or lips. In many cases, there is a peculiar excitability of temper and a resistance against control which render the patient very unmanageable; in other cases, again, a contrary disposition is observed; the mental faculties are blunted, the patient has a dull look, and sometimes falls into a state approaching idiotcy. Violent and long-continued headache may be followed by delirium and various degrees of mania.

These mental disorders seem to follow the same laws as the bodily ailments; they appear and disappear during the course of the disease, and under proper treatment are gradually removed at the same time as the convulsions or paralytic symptoms. Syphilis rarely results in confirmed madness.

The following case illustrates some of the points just sketched:—

Severe Nocturnal Headache—Impairment of Mind—Sudden Convulsive Attacks—Mania—Partial Convulsions—Cure under Specific Treatment.

Case 29.—A. B., a young man, aged 28, consulted me early in the month of October, 1866. On the front and right side of the frontal

bone there was a node of such considerable size as to prevent him from wearing his hat. The patient complained of pains in the bones, principally in those of the head, in the clavicles, and in the shins; the pains were worse at night. The head was drawn to the left side, in consequence of a node at the clavicular insertion of the sterno-cleido-mastoid, which had given rise to a considerable contraction of the muscle.

In addition to the above, there were also decided symptoms of spinal meningitis, viz., rigidity of the spine, inability to flex or rotate it, great difficulty in rising from his chair after sitting up for a short time. He was also subject to attacks of severe headache; and a striking peculiarity was that the pains were often relieved instantaneously on sitting up. The pain, likewise, was usually most severe on that part of the head which rested on the pillow; and on turning, the pain shifted to that part of the head which was most depending. The pupils were contracted, vision double, strabismus, with paralysis of externus rectus muscle.

The patient was ordered to take iodide of potassium, ten grains daily, in combination with ammonia, although he had been, according to his own account, unable to take the remedy before, through the purging which it excited, and which was undoubtedly due to the impurity of the medicine.

This treatment was continued for some time, the dose of the iodide being gradually increased; the nodes disappeared under its influence, and the night pains were materially diminished. This improvement, however, was only temporary, and did not last beyond two or three weeks. Towards the end of October, the patient was attacked with such severe pains in the head that he was obliged to return to London from the country, where he usually resided.

During the month of November, the pains continued to be most severe; he compared them as giving at times the sensation as if his head was being struck with a sledge-hammer. These violent pains continued for about a fortnight, but at the end of that time they appeared to yield to 40-grain doses of the iodide.

During November and December, the memory became affected; the patient had some difficulty in remembering the names of familiar objects; at the same time his disposition became changed—he was more irritable, and disposed to become insolent on contradiction. Sometimes he was unable to write a letter, or to spell his words. This state continued up to the beginning of January, when he was still under control, and had continued to take the full doses of iodide of potassium. The only symptom worthy of notice at this time was an increased excitability, with occasional appearances of heaviness; but the pain in the head was less severe and constant. He appeared to

have been somewhat reduced in strength, for he was less inclined to walk than formerly, yet his appetite continued voracious.

March 9, 1867.—While dressing to go out te dinner, the patient experienced a rather sudden attack; he felt uncomfortable, and then noticed that his face was drawn to one side; he remained on the bed for a few minutes, then rose, and completed his dressing. While standing with his back to the fire, and without premonitory sign of any kind, he fell suddenly backwards, striking the back of his head against the grate. He remained in the fit for half-an-hour, with convulsions and foaming at the mouth. He bit his tongue severely.

On recovering from the fit, nothing particular was observed. Two similar epileptic fits occurred on March 27th; they were not announced by any symptoms whatever. The second fit was very severe, the patient appearing to have lain on the floor for two hours. Soon afterwards, it was noticed that the mouth was drawn down on the left side.

The symptoms presented from March 27th to April 10th were rather connected with disorder of the intellectual faculties; the patient wandered, and entertained all kinds of delusions. On the 10th, a tendency to drowsiness was observed, the articulation was difficult; these symptoms progressed for two days, when a blister was applied to the back of the neck. On examination the following morning, I found him almost insensible, and breathing heavily; he remained in this state of stupor for six days, being able to rouse himself enough to take food and medicine, but relapsing again into a condition of almost complete insensibility. On the 16th, a large blister was applied to the nape of the neck.

On April 19th, at 6.30 a.m., he awoke out of this stupor, and appeared to be quite rational for a few minutes; but he soon relapsed, and began to wander. He was well enough, however, to sit up during the day, and although not quite clear in the head, was much less drowsy than he had been.

From this date his improvement, though gradual, was very well marked. I saw him again on April 13th, and ordered him to take iod. potass. one drachm, three times a day, in conjunction with the spir. am. arom.

April 27th.—On awakening, the wandering seemed more evident than usual, the articulation was rather thick, and the left hand was somewhat weak, as he was unable to hold a cup with it. Still, the general improvement continued up to the end of May, when the patient went to Margate, from which he did not seem to derive any benefit. The signs of irritability were now replaced by a more quiet order of symptoms, for, though not easy to manage, he appeared at times to be quite childish.

June 10th.—Has had another epileptic fit, the worst he has experienced yet; this was followed by another on the 22nd, and a third on the 27th August, the fits gradually becoming milder. In the beginning of September, the patient returned home to the country; but the excitement of seeing his relatives seemed to render him much worse. He, therefore, was sent back to London on September 20th. I now found that he was excessively excitable, and difficult to manage; his acts, occasionally, were those of a person deranged, so much so, that it became a question whether he should not be placed under restraint. The lower extremities were somewhat feeble, and their motions uncertain, so that it was unsafe for the patient to go down-stairs without assistance.

September 23rd.—The patient, at my request, was seen by Dr. Tuke and Mr. Cooper. They were both of opinion that he was of unsound mind, and that he should be placed under restraint. I considered such a step undesirable, for many reasons, unless entirely unavoidable; but the customary precautions were taken to meet any actual outbreak of madness.

September 28th.—No change worthy of note has taken place. Dr. Russell Reynolds saw the patient in consultation with me. Dr. Reynolds advised that the bi-oxide of mercury should be added to the ʒj doses of the iodide of potassium, or $\frac{1}{12}$th of a grain every night. Dr. Reynolds saw him again on November 4th, but did not suggest any change of treatment.

November 4th.—On the evening of this day, which had been passed without anything unusual, the patient was seized with convulsive twitchings of the left arm and leg, so severe that he was unable to keep the leg on a sofa; the trembling continued for about half-an-hour, and then ceased altogether. It was not attended by any other nervous symptoms.

November 26th.—Left London this day for the country, a good deal better in various respects. His strength has increased, as he can walk much better now than some time ago, but he is still very excitable. This condition of gradual, though slow progress continued to December 23rd, when the patient had another epileptic fit, and a recurrence of the attack on the 29th; there was then a respite until the 16th of January of the present year, when his last fit took place.

From this time he gradually improved, and was able to visit Aix-la-Chapelle, where he placed himself, by my advice, under the care of Dr. Kilian, for a course of waters and baths. The iodide of potassium was administered as before, and, in addition, the patient rubbed in one drachm of mercurial ointment, every night, from the 17th of January to the end of April.

On his return from Aix, a still further improvement was observable.

The patient was much stronger, and could take a good walk; the excitable state of his temper had almost entirely disappeared; the only nervous symptom which persisted was a drawing down of the mouth on the left side whenever the patient was greatly excited. I recommended him to continue the iodine in 3ss. doses, and to take a long sea voyage, an opportunity for which presented itself.

January, 1869.—I have just received a letter from the patient, who is now in Australia. The language is perfectly clear, and he expresses himself as being in perfect health.

Pustular Eruption—Tumour over Spine—Sudden Attack of Convulsions—Partial Paralysis and Impairment of Mind—Mixed Treatment—Cure.

The following particulars were kindly furnished me by Dr. Günther, of Hampton Wick:—

Case 30.—F. B., aged 32, a well-nourished and muscular man, came under treatment in the beginning of August, 1864. He chiefly complained of a numbness in the middle and fore-fingers of the right hand, and of a peculiar sensation which he occasionally experienced in the tongue. The whole of the trunk and thighs was the seat of a pustular eruption. On examining the spinal column, a large tumour was found over the last lumbar vertebræ and sacral bones. It was six inches long by four broad, irregular in shape, hard at some parts and soft at others. It did not project much, nor were the margins well defined. The tumour was not moveable, and fluctuation could not be detected.

It appeared that the patient had chancres several times in former years, and that the sores always disappeared under local treatment alone; but no further history of syphilis could be obtained. He had no idea that he was affected with syphilis. About two years ago, a tumour, similar to the one over the spine, had appeared on the sternum. He then, for the first time, consulted a medical practitioner, who ordered the iodide of potassium; the sternal tumour quickly disappeared, and since that time he had been apparently well. He was ordered to resume the iodine, two drachms of potass. iod. in six ounces of water; a table-spoonful three times a day.

The effect of the remedy was rapid; the tumour decreased in size, and the eruption disappeared, with the exception of some of the larger pustules. The general health also improved, the appetite became good, and the patient enjoyed refreshing sleep, yet he sometimes felt very tired. He experienced no headache or giddiness, but the sensation of numbness in the fingers remained.

September 7th, 1864.—The improvement above noted has continued to the present date, when the patient had an epileptic fit, followed by

another more violent epileptic attack on the 18th October. Drowsiness and great prostration of strength ensued, yet without giddiness or headache. About a week after the second fit, partial paralysis of the right side of the face was observed; the articulation was somewhat indistinct, and the patient appeared to be incoherent at times. Deglutition was impeded; but the senses of seeing and hearing were quite intact.

The patient was now put under a course of mercury, for which the iodide of potassium was substituted on November 17th, and a seton was inserted in the neck. He now complained of a sensation of numbness in the right leg.

December 6th.—No local change worthy of notice has taken place. The fits have not returned, nor has the general condition been aggravated. Dr. Reynolds saw the patient, in consultation with the usual practitioner in attendance, and it was agreed that the iodide should be continued. Under this treatment, the paralytic symptoms were gradually, yet very slowly relieved, and the spinal tumour disappeared. The patient was greatly improved, but not completely cured.

In May, 1865, he was advised to try the effects of change of air, and visited Aix-la-Chapelle, where he went through a course of mercury, under the care of Dr. Reumont. After six weeks' treatment, he returned home, remarkably improved in every respect. Every nervous symptom had disappeared, with the exception of slight paralysis on one side of the face, for which, on his return, galvanism was tried.

In 1866, he returned to Aix, but took the waters only, as he had no symptom of his old complaint. He was seen occasionally by his medical attendant, and appeared to be perfectly cured.

Gummy Tumours and Exudations in Brain and its Membranes—Convulsions—Partial Hemiplegia—Death—Post-mortem Appearances.

Case 31.—E. R., 47 years of age, was admitted into the Hospital Lariboisière on the 8th November, 1856. The patient had enjoyed good health up to the year 1849, when she was infected by her husband. She underwent regular treatment, but was not cured. Three months after the appearance of the chancre, she had consulted M. Ricord for inflammation of the throat, which appears to have been the only symptom which manifested itself until 1852, when the scalp became the seat of an abscess, preceded by long and severe pains in the part. This abscess finally healed under treatment directed by M. Cruveilhier; but during the treatment she had several attacks of what she described as "fits," amounting to about twenty; they had, however, disappeared nearly a year ago, but returned a few days before her admission into hospital. The fit is preceded by a general feeling of "malaise;" loss of consciousness then ensues; the eyes roll about;

the head, body, and limbs are agitated by convulsive movements; yet sometimes the spasmodic movements are more limited. Has never foamed at the mouth, or bitten her tongue. The attack continues from five to ten minutes, and goes off, leaving nothing behind it more than a sense of general fatigue, which persists for about an hour. Such is the general rule; but after some of the fits, partial paralysis of various muscles ensues, and disappears in a few days or in a month. On one occasion, incomplete hemiplegia of the left side continued for fifteen days; and about three months ago, the right arm became partially paralyzed after an attack.

On admission, her general health did not appear to be seriously affected; but the expression of the face is somewhat wild, and the intellect seems to be slightly impaired, without any loss of memory. The right side of the face is slightly paralyzed, the left angle of the mouth being higher up than the right; the right leg is also weaker than the left; and she cannot grasp objects with the fingers of the right hand. On examining the seat of the old ulcer on the top of the head, near the occipital suture, a deficiency of bone as large as a five-franc piece was discovered; the integuments are here thinned, and adherent to the subjacent parts, but no pulsation can be felt. The patient says that any rough examination of this part brings on a fit. Appetite good; pulse regular, 68. To take a scruple of the iodide and sarsaparilla, with the bichloride of mercury.

November 13th.—The patient has had a very severe fit, with violent spasms of the face and loss of consciousness, but no foaming at the mouth. In the evening, the right side of the body was completely paralyzed, sensation being lost as well as motion.

17th.—Profound stupor; followed on the 20th by loss of voice. A large blister was applied to the back of the neck.

21st.—No particular change, but the movements of the tongue are somewhat restored.

26th.—New fit for about a quarter of an hour, during which the paralyzed limbs were convulsed; pulse 72.

28th.—Patient has fallen into a state of deep coma, which continued to the 1st, when death ensued.

Post-mortem.—The loss of substance in the cranium did not penetrate deeply; the internal surface of the cranium corresponding to the external lesion was the seat of three small exostoses; the dura mater, at the points corresponding to them, was red, and appeared to be raised up by slight effusion; it was here adherent to the meninges. At this part of the dura mater, also, and on its inner surface, were observed two tumours of firm, yellowish matter, about the size of a half-penny each. They were sufficiently thick to press on the surface of the hemisphere without penetrating into it. The pia mater here

was injected. The right hemisphere appears to be healthy. On examining the convolutions near the fissure of Sylvius on the right side, and near the middle of the fissure, the grey substance was found to be the seat of a deposit, which, to the naked eye, looked exactly like concrete pus; the section was smooth and shining, the colour greyish-green, the consistency somewhat greater than that of the surrounding cortical substance, which was slightly softened and injected. The middle portion of the superior longitudinal sinus was sensibly thickened to the touch; one would have said that it was blocked up by some dense fibrinous concretion. On laying it open, however, it was found that the interior of the sinus was completely obliterated to the extent of several lines by a material exactly similar to that deposited in the brain. The corpora callosa, thalami, and other parts of the brain were healthy; the viscera of the chest and abdomen also appeared to be healthy. The microscope showed no trace of pus globules in the deposits; but when examined by M. Robin, they presented the special fibro-nuclear characters which have been already described.*

There are some points worthy of notice in the above case.

The patient had undergone several courses of treatment under the most competent surgeons; yet the symptoms alone were relieved, the diathesis was not extinguished. The lesions which terminated fatally were confined to the head; no trace of syphilitic disease was found in any other cavity or organ. This limitation to a single viscus is extremely rare.

The existence of a gummy deposit in the interior of the sinus is also most remarkable, and the fact might be doubted, had not the substance been examined by an histologist of M. Robin's rank.

Special diagnosis.—It is a matter of great importance to diagnose the nature of cerebral syphilis at the earliest moment possible.

Experience has now abundantly proved that syphilitic disease of the brain admits of great relief, and, in many cases,

* Zambaco, l.c., p. 482.

of eure, if timely discovered and treated in an appropriate manner. We are aequainted with the nature of the initial lesions, and we also know from analogy and from experienee that when their influence has been exereised for any time on the proper substanee of the brain, so as to produee organie ehanges therein, no eure ean be obtained. Nerve-tissue is not repaired by any new tissue similar to itself, or by any material capable of performing its funetions. A young gummy tumour may be, perhaps, absorbed—at all events, rendered quiescent—under the influenee of speeifie remedies, but delieate nerve-tissue, broken down by softening or damaged by inflammation, eannot be restored to a healthy and normal condition.

We have already seen how large a part the fibro-nuelear degeneration plays in the produetion of disease eonnected with the nervous system. Clinieal observation and pathology show that this degeneration may eontinue for some time without producing any considerable lesion of adjaeent tissues. In parts of the body whieh are aeeessible to the eye or hand, we can traee its rapid disappearanee under treatment; and there is no reason why a similar effeet should not be obtained in deep-seated organs. For the deep and delieate tissues of the eye, we now know that sueh is the ease.

The general diagnosis of organic syphilis has been discussed in a former chapter. The principles there laid down will enable us to arrive at the nature of the disease in most of those cases where the brain is affected.

The presenee of eo-existing lesions will, I believe, be more available as a diagnostie sign than was formerly thought, beeause inereased experienee has enabled us to deteet eerebral affections at an earlier period, and thus to throw them more within the range of that stage at whieh external manifestations are to be found.

But in some few eases great diffieulty in arriving at a eorreet diagnosis as to the nature of the affection exists. Thcre is, for example, no elear history of syphilis; no traee of secondary or tertiary lesions ean be diseovercd; the patient has eithcr escaped or overlooked them; in a word, none of the *general* aids already dcscribed as mcans of assisting our diagnosis exist. In these perplcxing, but fortunately not numerous eases, we must fall back on the speeial eharaetcrs of the affeetion, as revealed by its symptoms, and ask thc following question.

Is therc anything in the kind, order, devclopment, or othcr eireumstanees attending the symptoms of the cercbral disease whieh ean lead us to a knowledge of its spceifie eause; and, if not to a knowledge, are there any eharaeters derived from symptoms on whieh we ean establish a probably eorrect diagnosis between the syphilitie and the ordinary affection?

In other words, and to state the point briefly—Given a tumour in the brain, can its nature be established from the clinical history and symptomatology? We are told not; yet I believe that we shall approaeh mueh nearer the truth in cases of syphilitic tumour than for those whieh are of a eaneerous or serofulous origin. Those who lay down the question as I havc done above omit to notiee that it eannot be separated from the question of diathesis. The local effects of different tumours on adjacent nervous tissue may be the same, but their eontinucd effeets, the eireumstanecs undcr whieh they are produced and propagated, the train and order of symptoms, oftcn impress on eaeh eonstitutional affeetion a peeuliar physiognomy, which enables us to reeognise its nature. There is, for example, a marked differencc betwcen thc clinieal history and the train of symptoms produced by

scrofulous tubercle of the brain and gummy tumour of the same organ.

As I have said, however, in another place, our knowledge is not yet sufficiently advanced to furnish reliable elements for such differential diagnosis; but it may be well to notice briefly the points at which we seem to have arrived.

Attention has been already directed to the circumstance that epileptiform convulsions of syphilitic origin occur in adults, while ordinary epilepsy is a disease of youth. The law is reversed with respect to paralysis. The latter is an affection which most prevails in middle-aged or elderly persons; syphilitic paralysis, on the other hand, usually manifests itself during a period of life ranging between the ages of twenty and forty. These remarks, I should observe, are not intended to apply to cases of inherited syphilis.

The age of the patient, then, will excite suspicion, and indicate the necessity of further investigation in all doubtful cases. There are several other characters which, at first sight, are suggestive of a syphilitic origin. The principal of these are paralysis of the motor muscles of the eye, amaurosis in young persons, partial paralysis of a fugitive kind, or even more diffused paralysis, when not preceded by apoplectic symptoms. Paraplegia occurring during the prime of life is another symptom of a very suspicious nature, and above all, the apparently confused mixture of convulsive and paralytic disorders which occurs so frequently in syphilitic disease of the nervous system.

Amongst the characters to be noted during the course of the disease are the following: the paralysis is often incomplete, and remains so for a considerable time; it is likewise, in many cases, slowly progressive. Hemiplegia, again, often exists without any disturbance of the intellectual faculties; and the experienced practitioner will often note other minor

differences between the syphilitic affection and that ordinary form which is usually attributed to an apoplectic attack.

In the convulsive form of cerebral syphilis, the severe and persistent headache is a symptom of considerable value; also the occurrence of admonitory symptoms, such as epileptic vertigo, unilateral convulsions, fugitive paralysis, and some disorder of the mental faculties, which precede the fit. If the manner in which the fit begins and behaves itself be carefully examined, several points of difference between it and a regular epileptic attack will be observed. It is not always sudden; it is often broken up into parts, as it were, the intensity of which is various; the fit is more prolonged, and does not terminate so readily in apparent health; finally, the interval between each fit is often marked by a series of nervous or paralytic disorders—sometimes slight, at other times serious—which do not accompany ordinary epileptic attacks.

CHAPTER XXIV.

THORACIC AND ABDOMINAL AFFECTIONS.

Respiratory Organs—Syphilitic Phthisis—Illustrative Cases—Induration and Gangrene of Lung—Gummy Tumour—Diseases of Liver—Gummy Degeneration—Cicatricial Scars—Albuminuria—Lymphatic Glands.

Respiratory Organs. — With the exception of laryngitis, our knowledge of syphilitic affections of the respiratory organs is very limited. Some *post-mortem* examinations exist in which the morbid changes of the lung presented the characters which we recognise as belonging to syphilis in other organs; and the presumption that these morbid changes did actually appertain to syphilis is strengthened by the fact that they were not confined to the chest, but extended to other cavities.

On the other hand, the syphilitic history of the cases is, for the most part, very imperfect, while their clinical history is wanting altogether. In the early stages of an inquiry, where we desire to connect morbid anatomy with symptomatology, and thus establish the existence of affections hitherto overlooked, little or nothing is gained by informing us that "the patient presented the signs of ordinary phthisis." The knowledge already obtained from pathological anatomy renders this improbable; but before pronouncing any opinion, we must wait for detailed medical histories of the symptoms and progress of the disease.

The following case, published by M. Bazin, is interesting, as an example of syphilitic phthisis and its complications:—

Secondary Symptoms—Partial Hemiplegia—Laryngitis—Cavities in Lung—Disease of Liver—Albuminous Nephritis—Iodide of Potassium—Cure.

Case 32.—M. X., a commercial traveller, contracted a chancre in Spain, for which the proto-iodide was given during six weeks.

He consulted me a year afterwards relative to his marriage. I consented, as the chancre had not been followed by any constitutional symptoms, and I therefore regarded it as having been soft.

Six months after marriage, the young wife, a girl of good health and irreproachable reputation, became pregnant. She had an abortion at the sixth month; the child was covered with pustules.

Soon afterwards, the mother herself was attacked by a very malignant eruption, which rapidly spread over the whole body. She was treated by one of the physicians of St. Louis with mercury, the iodide, and cod-liver oil, but without success.

I saw the patient three months afterwards. The trunk, arms, and thighs were the seat of enormous serpiginous ulcers, which had ensued on a pustulo-crustaceous eruption. They were so characteristic in appearance that I at once formed my opinion as to the nature of the disease, and ordered mercury.

Some time afterwards, the patient was suddenly attacked by imperfect hemiplegia, with deviation of the tongue and mouth. The mercury was suspended, and the paralytic symptoms disappeared. This coincidence occurred several times, so that it was impossible not to admit a connection between the remedy and the paralysis. The iodide of potassium was, therefore, substituted for the mercury, and after various alternations, the ulcers were all healed.

This result, however, had not been long obtained, when laryngeal symptoms, indicating ulceration of the chordæ vocales, set in, and were quickly followed by signs of pulmonary phthisis. On auscultation we discovered numerous cavities in the lung; and soon afterwards symptoms of hepatic disease appeared, together with albuminous nephritis. M. Cruveilhier was now called in consultation; he pronounced the case to be one of tubercular phthisis, and said there was no hope whatever of cure.

As I did not agree with him, but attributed the pulmonary symptoms to the softening of gummy tumours, I resumed the iodide of potassium, and was fortunate enough to obtain a perfect cure, except that the voice was entirely lost. Several years have passed away, and the

patient still remains in the enjoyment of good health. As the loss of voice persisted, the larynx was examined by means of the laryngoscope. The chordæ vocales were found to be destroyed, and the larynx traversed in various directions by cicatricial bands.*

This interesting case encloses within its circle nearly the whole history of syphilis: the danger of marriage—the contamination of mother by child—the sudden outbreak of cerebral symptoms—their frequent disappearance and relapse—the multiplicity of disorders engendered, and their successive development from the larynx to the lungs, then to the liver, next to the kidneys—finally, the cure of four dangerous diseases by a specific treatment.

I am indebted to Dr. Broadbent for the following case, which recently came under his care:—

Chronic Cough—Great Emaciation—Extensive Dulness under Clavicle—Bronchial Respiration approaching the Cavernous — Iodine — Great Improvement.

Case 33.—H. D., aged 32-35, boot-closer, came under observation as an out-patient at St. Mary's Hospital, on the 24th September, 1868. He had been suffering from cough for some time, but had never had hæmoptysis. He expectorated a good deal of muco-purulent matter.

On examination, the expansion of the chest was found to be imperfect, especially on the right side. There was extensive dulness under the right clavicle, and the respiratory sound in this part of the chest was bronchial, approaching the cavernous in its character.

The peculiar complexion of the patient excited suspicion, and, on more minute inquiry, the following history was elicited.

Ten years previously he had been affected with syphilis, for which he underwent treatment at the Lock Hospital, under the care of Mr. Walter Coulson. Secondary symptoms manifested themselves, and at a later period, at intervals, he had nodes on the arm, on the head, and ulceration of the throat. He also affirms that he spat up a piece of bone from the throat.

When first seen as an out-patient, he was ordered to take cod-liver oil, and some pills containing morphia.

* Bazin, l. c., p. 89.

On the 5th October, 1868, a mixture containing gr. iv. of the iodide of potassium was ordered.

Improvement soon set in, and steadily increased. On the 14th December, his condition was noted as "much better." The dulness under the right clavicle was very slight. The respiratory sounds were pretty good; but there still remained a certain degree of bronchial resonance with the voice.

January 14th, 1869.—The patient is now all but well. The cough has entirely disappeared; he has gained flesh; and has been able to resume his work, which he does perfectly well.

Syphilitic phthisis was described by Portal; yet all the classical writers since his time have either omitted to notice syphilis as an immediate cause of phthisis or denied its influence. That it may closely resemble tubercular phthisis is evident from the case just described. The existence of gummy tumours in the lung has been demonstrated by pathological anatomy. When these tumours soften, they may produce the same physical signs and many of the objective symptoms indicating tubercular cavities; but even with the imperfect knowledge which we possess of syphilitic phthisis, it is permitted to believe that a more careful and extensive observation will lead to the discovery of certain characters peculiar to this form of pulmonary consumption. Thus, it has been observed that the syphilitic deposits do not affect by preference the upper part of the lung; that the patient's general health is not so deeply affected; that the cough and dyspnœa are seldom very severe; that the expectoration is less purulent, and does not present the same round, solid, purulent clots, so characteristic of scrofulous phthisis; finally, the colliquative diarrhœa of the latter disease does not exist. Whatever the reason may be, gummy tumours have little tendency to become developed in the sub-mucous tissue of the intestinal canal, although they are found so often at its superior orifice.

The existence of chronic pneumonia, and of hard hepatization terminating in gangrene, has been admitted by some writers. Dr. Moxon has published in Guy's "Hospital Reports" some valuable cases of "destruction of the lung by induration and sloughing, which may be a true syphilitic phthisis."

In one case, "the right upper lobe was very much indurated, granular in section, yet the granules could not be scraped off. It was darkish iron-grey in colour, firm, and tough."

On careful examination, the iron-grey colour was found to be produced by the deposit of a white material composed of elements like those usual in syphiloma. The cell-walls of the grey, hard tissue were confused; the elastic tissue no longer bounded definite cavities, but curved about in all directions, with a matter which acetic acid cleared up. This substance showed nuclei in some parts, in others small corpuscular bodies, filling the spaces between the elastic fibres.

Another case presented a remarkable specimen of circumscribed gangrene with hard hepatization; but it is not perfectly conclusive, inasmuch as the lungs contained scrofulous tubercles, as well as gummy tumours. The lower lobe of the lung exhibited an appearance which calls to mind the peculiar degeneration of gummy deposit when the fibrous element prevails.

"The lower lobe was very small, and excessively adherent; it showed a curiously extreme thickening of the fibrous septa, and a very great wasting of the intermediate tissue." This portion of the lung was reduced to a "mere relic."

The existence of circumscribed gummy tumour in the lungs has been established by many observers, and recently by Dr. Moxon, who remarks that "we commonly find two or three or more formations, each of the size of a single pulmonary lobule, or less; they have a dry, firmish consistency, and

a sulphur-yellow colour; and they generally lie near the surface of the lung, but do not come up to it."

The practical point, however, to be determined is, whether these gummy tumours are liable, like scrofulous tubercle, to become softened, and give rise to a cavity in the lung. As far as our present knowledge extends, it would appear that they have little tendency to terminate in abscess.

M. Ricord, in one case,* found five small caverns on the lower part of the left lung; they were partially filled by a viscid matter, and also contained a pultaceous detritus. The largest cavity was about the size of a small walnut.

Dr. Wilks, to whom is due the honour of having been one of the first in this country to direct our attention to visceral syphilis, has recorded a similar case. The diagnosis rests solely on pathological grounds, but these were sufficient to establish the nature of the disease.

The liver contained several gummy nodules, which the microscope showed to consist of nucleated fibres and simple fibrous tissue. The upper lobe of the left lung contained a similar mass in process of softening, and below this were a few smaller deposits of the same material.

The larger nodules were about the size of a marble, and consisted of a firm, yellowish, dry substance, exactly like that in the liver, except in being less firm. Near one of these small masses was another in process of softening, and forming a cavity. The microscope showed that the masses exactly resembled those found in the liver, and thus differed widely in their composition from any ordinary pneumonic or tuberculous deposit.*

Liver.—The surgeons of the sixteenth century were well acquainted with the fact that syphilis affects the liver. Some even placed the seat of the disease in that organ. We

* Icon., Plate xxviii., bis. † Guy's "Hosp. Rep.," vol. ix., 1863, p. 34.

must, however, come down to the early part of the present century before we find a clear case of hepatic syphilis confirmed by pathological anatomy. The case occurred in a *maison de santé* kept by M. Ricord, and is related in his "Illustrated Clinique." Since then, Dittrich, Budd, Virchow, Wilks, Bristowe, and many others, have published observations on, and cases of, the syphilitic affection. A case, with an interesting report annexed, has been given by Dr. Hermann Weber, in the seventeenth volume of the "Pathological Transactions."*

In relation to the subject of hepatic syphilis, the remark which I have already made again presents itself. Attention has been exclusively fixed on the pathological anatomy of the disease; while the symptoms are recorded in such a summary manner as to render any clinical description impossible. Some explanation may, perhaps, be found in the circumstance that certain deep-seated lesions of the liver are circumscribed, and appear to be latent; besides which, we know that the functions of the liver may be carried on even when the organ is the seat of considerable disease. The principal fact, however, established by recent investigations, is that syphilis attacks the liver much more frequently than any other viscus.

Syphilitic affections of the liver appear to bear a certain analogy to those of the testicle. In the majority of cases, they commence with enlargement and end in atrophy; but this sequence is not constantly observed. The period at which the disease manifests itself varies much in different cases. M. Bazin relates a case which occurred fifteen years after the initial ulcer; in many cases, on the other hand, the hepatic affection has coincided with tubercular eruptions or late tertiary symptoms.

* Vol. xvii., p. 152, 1866.

In the early stage of the disease, the patient generally complains of dull pain in the hepatic region. After some time the organ becomes enlarged, and projects below the level of the ribs, the increase of volume being easily recognised by the touch and by percussion. The size which the liver attains is sometimes very considerable. In some cases, the enlarged liver is fibrous interiorly, and marked on its surface by irregular projections, which are readily discerned by the touch. At a later stage, the organ is found to be atrophied; it no longer projects below the false ribs; and certain inequalities or points of induration have also been discovered on its surface, a circumstance which has led to error of diagnosis, the disease having been mistaken for cancer.

The functional symptoms produced by syphilitic disease of the liver are, generally speaking, the same as those which accompany the analogous ordinary affections of the organ. The pain is uncertain, and not usually severe. Many patients have enlarged livers for months without experiencing any degree of pain sufficient to attract their attention. In other cases, and at an early stage of the disease, some dull pain is felt in the region of the liver, which is increased by pressure, but has not been observed to present the character of nocturnal exacerbation. On examining the various published cases, I do not find any allusion made to the pain behind the shoulder-blade, which is said to accompany ordinary disease of the liver.

Gradual emaciation, followed by slowly-developed ascites, is a very general effect of syphilitic liver disease, but presenting nothing peculiar. It has, however, been stated that interstitial inflammation of the liver is the lesion which commonly gives rise to ascites, with tumefaction of the spleen. Icterus seldom occurs, although it can readily be

understood how pressure on the bile-ducts produced by a gummy tumour would give rise to this symptom.

If the results of *post-mortem* examinations be taken as the basis of our conclusions, it would appear that syphilis attacks the liver more frequently than any other viscus. According to Virchow, the capsule or the substance of the organ may be the seat of the disease. The latter is rarely, if ever, confined to the membranes; and cases are to be regarded as suspicious when other parts of the liver are not affected at the same time as the enveloping membranes.

If, then, we exclude morbid changes the specific nature of which has not been sufficiently demonstrated, it may be admitted that syphilis produces two kinds of lesion in the liver—the gummy tumour, or infiltration, and the cicatricial scars or furrows on the surface of the organ.

These scars, together with the fibrous degeneration which accompany them, may be often traced to the gummy inflammation; the gummy deposit, however, has not always been found in connection with them, and Virchow is of opinion that, in the majority of cases, the interstitial hepatitis is simple rather than gummatous.

The circumscribed gummy tumour of the liver does not require any particular description. It has been clearly shown to be the same in external and in histological characters as the tumours developed in other viscera under the influence of syphilis. The tumours are of various sizes, and may occupy any part of the organ; but they are more frequently seated near the surface of the liver than in its interior.

From the frequency of their occurrence, and the nature of the organ in which they are seated, the various stages of development have been well observed. In the early stage, Dr. Moxon found the cheesy nodules surrounded by a border

of inflamed tissue like that which surrounds hepatic abscess. At a later stage, the yellow masses of syphilitic matter are often surrounded by white fibrous material, which may send out fibrous spurs into the interlobular tissue.

In the case reported by Dr. H. Weber,* the different stages of development are carefully described; and I may here observe how these pathological details are not devoid of interest in a practical point of view, inasmuch as they assist us in understanding the truly marvellous results often produced by specific remedies in the treatment of visceral syphilis.

The lesions described by Dr. Weber appear to belong, for the most part, to the gummy tumour while in process of being formed. The smaller spots were "in the centre slightly prominent, and of a deeper red colour than the normal tissue, and had a pale, yellowish circumference; other spots, especially the larger, were in the centre greyish red, distinctly depressed, and surrounded by a slightly-elevated wall, the inner zone of this wall being darker and deeper red than the normal tissue." Under the microscope, the centre showed an increase of fresh connective tissue, studded with numerous nuclei, a few of which were fusiform, and with some large, oval, nucleated cells, more or less advanced in fatty degeneration. In many of the patches there was evidence of a tendency to cicatrization, and Dr. Weber remarks that "the result of this process, if the patient had lived long enough, would probably have been the formation of numerous cicatrices and a puckered appearance of the liver."

The cicatricial scars alluded to by Dr. Weber are frequently found on the surface of the liver in syphilitic patients; they have also been called furrows, or depressions,

* "Transactions of Pathological Society," vol. xvii., 1866, p. 152.

and they may be regarded as characteristic of, if not altogether special to, the constitutional affection.

They co-exist very frequently with other syphilitic lesions of the liver, and have also been found in connection with syphilitic disease of the brain. Thus, in sixteen cases of hepatic disease arising from syphilis, they were noted twelve times by Frerichs and Virchow. In eight cases of cerebral syphilis recorded by Meyer, they existed five times; in twenty cases of visceral syphilis observed by M. Lancereaux,* these cicatricial furrows of the liver were seen twelve times; in twenty-six cases of visceral syphilis described by Dr. Moxon, the presence of the cicatrix is noted fourteen times.

From the above remarks, it may be concluded that the hepatic cicatricial furrows are very characteristic of syphilis.

They appear to be the result of fibrous degeneration ensuing on a chronic gummatous or simple inflammation, which may commence on the capsule or in the substance of the organ. When the inflammation has commenced on the capsule, or extended to it from deeper parts, the cicatricial furrows are often found connected to the neighbouring organs, and especially to the diaphragm, by bands of adhesion, which become exceedingly firm and almost ligamentous.

Virchow considers these dense bands as very characteristic; they may be found independently of syphilis, but in such cases they never present the same dense, solid structure.

The cicatricial scars of the liver present the appearance of puckered folds or depressions, of a whitish colour; from these scars, bands or partitions of white fibrous tissue penetrate in various directions into the substance of the organ, dividing it into segments, and giving rise to more or less atrophy of liver-tissue, just as we see in the testicle.

In some cases, the interstitial partition can be traced down

* Des cicatr. du foie, &c., Paris, 1862, p. 23.

to a gummy formation, with the fibrous zone or spurs of which it becomes connected; in other cases, the development of the fibrous bands appears to depend on simple inflammation, followed by contraction, atrophy, and cirrhosis. As the fibrous bands appear to extend from one centre of lesion to another, they may, when numerous, divide the liver into various compartments or lobules, like those of the kidney of young animals. Virchow has remarked, as peculiar to syphilis, that these interstitial partitions do not necessarily follow the ramifications of the vena portæ, yet they may pass from the suspensory ligament to the portal and hepatic veins, twisting the vessels and compressing their walls. The proper tissue of the liver is often completely atrophied and indurated in the intervals between the fibrous portions. When these lesions occur near the surface of the organ, the morbid change has often been mistaken for cancer.

The liver of syphilitic patients is occasionally the seat of amylaceous degeneration; but this sequela of the cachexy is not frequent.

The anatomical diagnosis of the cicatricial induration requires some notice. In cirrhosis of the liver, from spirit-drinking, we may find depressions resembling at first sight those of syphilis; but the former are never so deep; they do not present the same general characters; and the fibrous degenerations have a tendency to follow the portal canals. They are often accompanied by cardiac disease; whereas the syphilitic lesion is, as I have shown, almost always attended by specific changes in other viscera, which will assist in determining its nature.

Cancer and scrofulous tubercle of the liver are not usually attended by the cicatricial furrows, with their fibrous septa, penetrating into the substance of the organ. Laceration of the liver might, perhaps, give rise to the furrow; but it

should be remembered that such an accident is almost always fatal.

The diagnosis of syphilitic disease of the liver during life is often attended by difficulty. It has been mistaken for cancer and for hydatids. Dr. Moxon relates a case in which the constitutional lesion had been mistaken for a hydatid; the patient left the hospital, but returned again and died. The liver and several other organs were the seat of gummy degeneration.

When the liver is somewhat enlarged, hard, and nodulated, the surgeon may hesitate between syphilis and cancer. The age of the patient will not help us much towards the diagnosis, for cancer of the liver is not uncommon between the ages of thirty-five to forty. The results of manual examination, also, cannot be relied on. The firm nodules of syphiloma may give the same sensations to the touch as cancerous tumours; but it has been observed that the liver is much more deformed by syphilis than by cancer. The lancinating pains of cancer are not observable in that disease until a late period.

In endeavouring to establish our diagnosis, co-existing lesions must be carefully sought for, and their nature determined, whether they be syphilitic or cancerous. Cancer may extend to some neighbouring organ, the stomach, for example; and the symptoms then superadded will be quite different from those produced by syphilis. Cancer of the liver, again, is frequently attended by jaundice, which rarely exists in syphilitic cases.

Kidneys.—Rayer, having observed the occurrence of albuminuria in several syphilitic patients, was led to infer the specific nature of the renal disease, and has described the lesions which he discovered after death. The organ was irregular on the surface, and indurated; the cortical substance anæmic, slightly hardened, and contained a morbid

deposit, the nature of which M. Rayer has omitted to characterize clearly, but which seems to have been amylaceous.

The functional disorders of syphilitic albuminuria are anasarca, ascites, and albuminous urine. The symptoms present nothing peculiar, and we must establish our clinical diagnosis on whatever elements we may be able to obtain from the history of the case and the concomitant lesions.

The pathological anatomy of the syphilitic kidney has not yet been clearly made out. Virchow says that the commonest form in which syphilis attacks the organ is that of interstitial nephritis. The portions of the kidney involved becomes indurated; the interstitial tissue contracts; the epithelial covering of the uriniferous canals becomes atrophied, and the surface of the organ is marked by scars. The renal disease is always accompanied by lardaceous degeneration.

Dr. Moxon, on the other hand, considers that syphilitic disease of the kidney consists in the lardaceous degeneration usually combined with another state which corresponds to "Bright's large white kidney" — the organ being large, semi-pellucid, whitish-grey, and lardaceous.

In one case only, Dr. Moxon found a syphilitic gumma. It was as large as a small potato, and "was composed of a yellowish substance, quite uniform in appearance, which was firm, hard, and tough."

The internal portion of the tumour, under the microscope, showed "small corpuscles crowded together, first obscuring, and then destroying and replacing the proper tissue, and then themselves perishing into a heap of fat-grains and globules."

The termination of syphilitic albuminuria is not always fatal, although the disease generally sets in at a very late period, and when the patient's health has been already much damaged. I have already noticed a case of cure effected by

M. Bazin. Ollier likewise cured a patient labouring under anasarca as well as renal disease. In several other cases reported, a marked improvement was obtained, although no perfect cure ensued. On the whole, however, it may be said that the prognosis in cases of syphilitic albuminuria is unfavourable. The iodide of potassium in large doses, continued for a considerable length of time, was the remedy mainly relied on.

Morbid changes connected with syphilis have also been discovered in the spleen, uterus, and other abdominal viscera; but I have not thought it expedient to describe them, partly because our knowledge concerning them is yet imperfect, and partly from a desire not to overlay with details a work which I have endeavoured to render as compendious as possible.

Lymphatic Glands.

The condition of the lymphatic ganglia, as connected with syphilis, is a subject of much interest. We have seen how one of the first effects of the poison is to produce induration of the inguinal glands. The outbreak of secondary symptoms is also accompanied by swelling and induration of the cervical glands; and pathological anatomy has demonstrated the fact that the same influence is exercised on the deep-seated glands in a great majority of cases of visceral syphilis, if not in all.

The glandular affection may exist in any part of the body, but it is most frequently observed in the abdomen, along the line of the lumbar and inguinal glands; the cervical glands appear to come next in order of frequency, and then the bronchial and mediastinal glands.

We owe to the labours of Virchow nearly all that is known on this obscure yet interesting point in the medical history of syphilis, and from his works the following particulars are chiefly derived.

The first effect of the poison appears to be one of simple irritation, analogous to that which occurs in cases of scrofula. The lymphatic cells are increased in number, and the follicles become larger, presenting the appearance of white or grey points. The whole gland appears to be more or less injected, but this condition gradually subsides, and the gland softens. The tumefaction, however, does not subside; in proportion as the follicles increase by the multiplication of the cells, the interstices between them disappear, and the gland presents a uniform appearance, being of a whitish colour, or greyish, with a tint of red.

This condition Virchow calls medullary. It resembles the glandular swelling which accompanies typhoid fever, but is moister and more medullary in appearance. On the other hand, it is firmer and paler than the scrofulous gland.

In non-syphilitic affections, the glandular irritation may lead to acute softening or to suppuration. These changes do not occur in syphilis; when the special affection assumes a chronic form, it usually terminates in caseous degeneration.

The cellular elements and the newly-formed cells of the gland undergo a kind of dry necrosis; they perish, and, if not absorbed, form a detritus resembling the gummy deposit in its various stages of caseous degeneration.

When the changes now described involve a considerable number of lymphatic glands, the constitution of the patient is frequently affected in a very unfavourable manner; but how far the cachexia produced may depend on the glandular affections, or on the co-existing visceral disease, it is by no means easy to say. In many cases, the increase of white

corpuscles in the blood has been attributed to the disordered state of the lymphatic glands, and it seems reasonable to conclude that the gradual emaciation and diminution of the red globules which occur during later stages of syphilis are connected with a similar cause.

SPECIAL FORMULARY.

I. Lotions.

No. 1.

Lotio Hydrarg. Flava.

No. 2.

Lotio Hydrarg. Nigra.

British Pharmacopœia.

[Infecting sores and mucous patches.]

No. 3.

Cupri Sulph., gr. ij.
Aquæ, ad ℥j. M.

No. 4.

Cupri Sulph., gr. iv.
Aquæ, ad ʒij. M.
[To be applied once a day with a camel-hair pencil.]

No. 5.

Ferri Tartar., gr. x.
Aquæ, ad ℥j. M.
[The above are suitable lotions for non-infecting chancre.]

No. 6.

Liq. Sodæ Chlorat., ʒj.
Aquæ, ℥ij. M.

Bumstead.

No. 7.

Lotio Acidi Carbolici.

Acid. Carbol., ʒj.
Aquæ, ℥iij. M.
[For non-infecting chancre.]

No. 8.

Lotio Acidi Tannici.

Acidi Tan., ℈ij.
Vini Aromat., ℥viij. M.

L. Parker.

[Astringent lotion for chancre.]

No. 9.

Tinct. Benzo. Compos.

British Pharmacopœia.

[Dressing for gangrenous chancre.]

No. 10.

Vini Aromat., ℥ vj.
Extr. Opii, ℈j. M.

Ricord.

[Irritable chancre in females.]

No. 11.

Aromatic Wine.

French Codex.

[This useful remedy is composed of four ounces of aromatic herbs, digested for eight days in two pints of red wine. The herbs employed are rosemary, rue, sage, hyssop, lavender, absinthium, origanum, mellilotum, thyme, laurel, flowers of the red rose, chamomile, and elder.]

No. 12.

Zinci Sulph., gr. ij. ad gr. vij.
Tinct. Lavandulæ Compos., ʒ ss.
Aquæ, ad ℥j. M.

[Non-infecting chancre and open chancrous bubo.]

No. 13.

Hydrarg. Perchlor, gr. ij.
Acidi Hydrochlor. Dil., ♏ vj.
Aquæ, ad ℥j. M.

[Fissures of the tongue and secondary ulcers of throat.]

[The preceding should be applied once or twice a-day with a camel-hair pencil, and will be found more efficacious than any of the ordinary gargles.]

No. 14.

Argent. Nitrat., gr. xx.
Aquæ, ad ℥j. M.

No. 15.

Ferri Tartar., ℈j. ad ʒj.
Aquæ, ℥j. M.
Ft. Lotio.

No. 16.

Glycerinæ, ʒ ss.
Acid. Carbol., gr. x.
Aquæ, ℥j. M.

No. 17.

Glycerinæ, ʒ ss.
Acid. Carbol., gr. xx. ad ʒ ss.
Aquæ, ℥j. M.

[The above are suitable for phagedenic sores.]

No. 18.

Potass. Permangan, gr. lxxxv.
Aquæ, ℥j. M.

Bumstead.

[Saturated solution for phagedenic chancre.]

No. 19.

Argent. Nitrat., gr. xiv.
Liq. Calcis, ℥j. M.

[Useful in cases of chancrous bubo, when ordinary lotions have failed.]

No. 20.

Liq. Sodæ Chlorat., ℥j.
Aquæ, ad ℥ xij. M.

[Extensive tertiary and offensive ulcerations.]

No. 21.

Ferri Potassio-tartar., ʒ iv.
Aquæ, ℥v. M.

Ricord.

[As dressing for phagedenic chancre. M. Ricord gives at the same time, internally, a table-spoonful of the same solution three times a-day, before meals.]

II. Ointments.

No. 22.

Ung. Hydrarg., ℥viij.
Extr. Opii, ℈j.
Extr. Bellad., ℈iv. M.
[Orchitis. Inflammatory bubo.]

No. 23.

Unguentum Hydr. Subchloridi.
Hydrarg. Subchl., ʒ ss.
Unguent. Cetac., ℥j. M.
[Fissured ulcers of rectum.]

No. 24.

Unguentum Picis.
Picis Purific, ℥j.
Adipis ℥vij. M.
[Scaly eruptions. Psoriasis.]

No. 25.

Hydrarg. Iodid. Virid., ℈j.
Adipis Benzo., ℥j. M.
[Scaly eruptions.]

No. 26.

Hydrarg. Oxidi Rub. } āā, gr. x.
Hydrarg. Ammoniati }
Adipis Benzoat. ʒj. M.
[Tertiary ulcerations.]

III. Caustics.

No. 27.

Carbo-sulphuric Paste.

Sulphuric acid, six scruples ; finely-powdered and sifted charcoal, enough to make a soft, homogeneous paste. Keep in a dry place and in a well-stoppered bottle.

[Phagedenic chancre.]

No. 28.

Chloride of Zinc Paste.

Chloride of Zinc,
Flour, dried, } Equal parts.

Add enough of alcohol to make a paste, which is spread on linen. A disc is applied for about two hours.

[Chancre. Chancrous bubo.]

No. 29.

Liq. Hydrarg. Nitrat. Acidus.

No. 30.

Acidum Nitricum.

[The acid nitrate of mercury and the strong nitric acid may be applied, by means of a glass rod, in cases of phagedena.]

IV. Powders.

No. 31.

Bark, Charcoal, Camphor, &c.

[Sprinkled over gangrenous chancre or gangrenous ulcers.]

No. 32.

Pulvis Sabinæ Compositus.

Pulv. Sabin.,
Ferri Oxyd., } āā, 3j. M.
Pulv. Alum.,

[Vegetations, &c.]

No. 33.

Hydrarg. Subchloridum.

[Sprinkled over mucous patches.]

Or

Hydr. Subch., Amyli, } Partes equales. M.

V. Gargles.

No. 34.

Acid. Tannici, ℈j.
Spirit. Vini Gal., ʒij.
Aq. Rosæ, ad ʒviij. M.

L. Parker.

No. 35.

Boracis, ʒj. ad ij.
Aquæ, ʒviij. M.

[Aphthous ulcers of mouth.]

Ricord.

No. 36.

Hydrarg. Perchlorid., gr. vj.
Acid. Hydrochloric Dil., ♏. xij.
Mellis, ʒss.
Aquæ, destillatæ ad ʒviij. M.

[Secondary ulcerations and mucous patches of throat. The teeth should be carefully washed after using this gargle.]

No. 37.

Liq. Sodæ Chlorat., ʒvj.
Aquæ destillatæ, ad ʒviij. M.

[Salivation.]

VI. Mixtures.

No. 38.

Potass. Iodid., gr. iij.
Spir. Ammon. Arom., ♏xx.
Tinct. Aurant. ad ʒj. M.

In half a wine-glass of water three times a day.

[Rupia, nodes, late secondary and tertiary symptoms. Dose gradually increased according to indications.]

No. 39.

Potass. Iodid., ℈j.
Decoct. Sarsæ., Oj. M.
To be taken in the twenty-four hours.
[Tertiary syphilis.]

No. 40.

Potass. Chlorat., ℈iij.
Mist. Acaciæ, ℥iv. M.
[Mercurial stomatitis.]
Ricord.

Or,

No. 41.

Potass. Chlor., ℈iv. ad vj.
Syrup. Limon., ℥ij.
Aquæ, ℥vj. M.
To be taken in two doses during the day.
Robert.

No. 42.

Potass. Chlor., ℈j. ad ʒss.
Aquæ Camphor, } āā, ℥ss.
Aquæ, } M.
Three times a-day.
[Salivation, or to correct the local effects of mercury; may be used first as a gargle, and then swallowed.]

No. 43.

Liq. Hydrarg. Perchlorid., ♏xx. ad ʒjss.
Tinct. Opii, ♏v.
Tinct. Aurantii, ad ʒij. M.
[Constitutional syphilis.]

No. 44.

Tinct. Opii., ♏v.
Ammon. Carb., gr. iv.
Decoct. Cinchonæ, ℥ji. M.
Three times a-day.
[Gangrenous and painful chancre.]

No. 45.

Mistura Hydrarg. Biniodidi.

Hydrarg. Perchlor., gr. $\frac{1}{10}$.
Potass. Iodid., gr. iij.
Infus. Quassiæ, ℥j. M.

Male Lock Hospital.

[Secondary syphilis.]

No. 46.

Hydrarg. Biniod., gr. iij.
Potas. Iodid., ℈x.
Syrup Acac. Gum., Oj. M.
A table-spoonful twice a-day.

Ricord.

[For the symptoms of the intermediate stage.]

No. 47.

Ferri Iodid., ʒ ij, ad iij.
Gentianæ Syrup., Oj. M.
A table-spoonful twice a-day.

Ricord.

[In cases where tonics are required.]

VII. Pills.

No. 48.

Pil. Hydrarg., gr. iv.
Pulver. Opii, gr. $\frac{1}{8}$ ad $\frac{1}{4}$. M.

No. 49.

Pil. Hydrarg., gr. iij.
Pulver. Ipecac. Comp., gr. ij. M.

No. 50.

Hydrarg. Iodid. Rub., gr. $\frac{1}{12}$.
Saponis Duri, gr. j.
Pulver. Glycr., gr. $\frac{1}{2}$. M.

[The above for constitutional syphilis.]

No. 51.

Hydrarg. Cyanid., gr. $\frac{1}{10}$.
Saponis Duri, gr. j.
Pulver. Glycyr., gr. $\frac{1}{2}$. M.

[Said by some writers to be less irritating than any other properties of mercury.]

No. 52.

Pil. Hydrarg., gr. iij.
Hydrarg. Subchlor., gr. j.
Ext. Opii, gr. $\frac{1}{2}$. M.

No. 53.

Hydrarg. Subchlor., gr. iij.
Pulv. Opii. gr. $\frac{1}{4}$.
Confect. Rosæ Gal., q. s. M.

[In cases where rapid action is required.]

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By the same Author.

STONE IN THE BLADDER;

WITH SPECIAL REFERENCE TO

ITS PREVENTION, EARLY SYMPTOMS,

AND

TREATMENT BY LITHOTRITY.

BY

WALTER J. COULSON, F.R.C.S.,

SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND DISEASES OF GENITO-URINARY ORGANS, AND THE LOCK HOSPITAL.

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